



Global Research

3 May 2017

PLAINTIFF'S
EXHIBITCASE
NO.EXHIBIT
NO. 7

Anadarko Petroleum Corp.

Large Exploration Expense Drives 1Q17 EPS/CFPS Miss but EBITDX Beats; Maintains 2017 Guidance

1Q EPS/CFPS misses on large exploration expense but EBITDX beats

Clean 1Q EPS (loss) of (\$0.60) was much wider than UBSe of (\$0.28) & consensus of (\$0.24) with the miss vs. UBSe driven entirely by a much higher than expected exploration expense due to the dry hole at Shenandoah-6 (impacting EPS by >\$0.30/share). CFPS of \$1.84 also missed consensus' \$1.99 & UBSe of \$2.11 while EBITDX of ~\$1.66bn exceeded expectations. Production fell 4% YoY to 795 MBoed, towards the high end its "adjusted" guidance range of 779-801 MBoed (including volumes from divested assets) but just below UBSe of 801 MBoed. Per-unit costs rose 29% YoY to \$6.57/Mcfe, ~9% above UBSe due to the higher exploration expense.

No change to 2017 guidance but 2Q volume guide a bit light vs. expectations

APC maintained its 2017 guidance which includes a capex budget of \$4.5-\$4.7bn (+60-68% YoY) and volumes of 644-655 MBoed (roughly flat YoY pro-forma for divestitures). Production guidance excludes volumes associated with its recent Eagle Ford and Marcellus divestitures that closed in 1Q17 (contributed a combined ~124 MBoed during the quarter) implying APC's "reported" production is ~675-686 MBoed. APC also disclosed 2Q17 volume guidance of 626-648 MBoed, below consensus of 663 MBoed and our prior estimate of 653 MBoed. We lowered our 2017 CFPS estimate from \$9.15 to \$8.90 (mostly on the 1Q miss) and made minor changes to 2018 CFPS.

Other key takeaways from 1Q results:

1) investigators confirmed the recent home explosion in Firestone, CO was caused by an abandoned, severed one inch gas line that was still connected to APC's nearby well & had not been sealed off properly (several uncertainties are still under investigation including when the line was cut, how it was cut, and who is responsible); 2) currently at 15 rigs and 6 rigs in the Delaware and DJ Basins, respectively (vs. 9 and 5 rigs at YE16); 3) testing a new completion design in the DJ Basin with cumulative oil production outperforming current type curve by >10% after ~100 days; & 4) Calpurnia (deepwater GoM) and Gorgon (Colombia) exploration wells encountered 20 feet of net oil pay and 260-360 feet of gas pay, respectively, while the Shenandoah-6 appraisal well was dry.

Valuation: discount to peers on price/NAV and EV/DACF

Our \$80 price target assumes ~0.70x NAV, or 7.0x normalized 2017E DACF.

Equities

Americas

Oil Companies, Secondary

12-month rating **Buy**12m price target **US\$80.00**Price **US\$56.28**

RIC: APC.N BBG: APC US

Trading data and key metrics

52-wk range US\$72.69-44.99

Market cap. US\$31.5bn

Shares o/s 560m (COM)

Free float 100%

Avg. daily volume ('000) 1,167

Avg. daily value (m) US\$73.3

Common s/h equity (12/17E) US\$15.4bn

P/BV (12/17E) 2.0x

EPS (UBS, diluted) (US\$)

	12/17E		% ch	Cons.
	From	To		
Q1	(0.28)	(0.60)	NM	(0.24)
Q2E	(0.02)	(0.06)	NM	(0.08)
Q3E	0.17	0.18	6	0.02
Q4E	0.33	0.37	12	0.08
12/17E	0.20	(0.10)	NM	(0.23)
12/18E	1.80	1.50	-17	0.64
12/19E	3.65	3.65	NM	2.17

William A Featherston

Analyst

william.featherston@ubs.com

+1-212-713 9701

Michael Ziffer, CFA

Associate Analyst

michael.ziffer@ubs.com

+1-212-713 2257

Christopher Zhang, CFA

Associate Analyst

christopher.zhang@ubs.com

+1-212-713 9957

Highlights (US\$m)	12/14	12/15	12/16	12/17E	12/18E	12/19E	12/20E	12/21E
EBITDX	10,878	5,126	4,324	6,866	8,454	10,573	11,649	12,716
DACF	9,683	5,333	3,647	5,665	7,230	9,965	10,969	11,466
CFPS (UBS, US\$)	17.83	8.87	5.30	8.90	11.65	14.85	16.40	17.90
EPS (UBS, US\$)	4.13	(2.01)	(3.08)	(0.10)	1.50	3.65	4.25	4.95
Profitability/valuation	12/14	12/15	12/16	12/17E	12/18E	12/19E	12/20E	12/21E
Prod per share growth %	7.2	-1.2	-9.0	-17.1	3.8	7.5	6.5	7.5
ROACE %	5.3	(0.4)	(1.5)	1.3	3.8	6.5	7.1	7.5
EV/EBITDX x	5.6	10.4	9.8	6.4	5.1	4.0	3.5	3.1
EV/DACF x	6.3	10.0	11.6	7.8	5.9	4.2	3.7	3.4
P/CFPS (UBS) x	5.3	8.5	10.0	6.3	4.8	3.8	3.4	3.1

Source: Company accounts, Thomson Reuters, UBS estimates. Metrics marked as (UBS) have had analyst adjustments applied. Valuations: based on an average share price that year, (E) based on a share price of US\$56.28 on 02 May 2017 19:34 EDT

www.ubs.com/investmentresearch

This report has been prepared by UBS Securities LLC. **ANALYST CERTIFICATION AND REQUIRED DISCLOSURES BEGIN ON PAGE 25.** UBS does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Anadarko Petroleum Corp.

Buy (Price target US\$80.00)

UBS Research THESIS MAP a guide to our thinking and what's where in this report

PIVOTAL QUESTIONS

Q: Can a large-cap, global E&P offer attractive long-term oil growth?

While there is investor concern that large-cap, global E&Ps will struggle to deliver competitive long-term growth, APC is an exception. Notably, APC plans to direct the ~\$6 billion in free cash flow that should be generated from its recently acquired deepwater Gulf of Mexico assets over the next five years to its onshore activities in the Delaware and DJ Basins where it has added a combined 13 rigs since 3Q and expects to increase activity further which should more than double its production from these fields to 600+ MBoed by 2020. This should enable +15% (+11% organically, ex Gulf Mexico acquisition) companywide oil CAGR from 2016-21, assuming ~\$55/Bbl WTI and \$3/Mcf Henry Hub. Compared to other large-cap E&Ps that can deliver comparable long-term growth, APC trades at a discount to these peers.

Q: What does APC plan to do with its large cash position?

After closing its Marcellus and Eagle Ford divestitures last quarter, APC now has ~\$5.8 billion of cash on its balance sheet. We expect it to seek bolt-on acquisition opportunities in the Delaware and DJ basins to deploy this cash. Should no attractive M&A opportunities arise and if oil prices remain above \$50/Bbl, we would expect APC to boost its capex to levels in excess of operating cash flow and accelerate longer-term growth above its +15% CAGR target.

UBS VIEW

APC should deliver above-average cash flow per debt-adjusted share growth over the next several years and has a significant inventory of unbooked deepwater discoveries & unconventional US resources that offer longer term growth opportunities or are asset monetization candidates to improve its balance sheet and/or help fund its development projects. Notably, APC plans to direct the free cash flow from its recently acquired Gulf of Mexico assets to accelerating US onshore activity which should enable companywide oil growth of +15% (+11% organically) per annum through 2020 assuming ~\$55/Bbl (vs. peers' mid-single digit growth). And following asset sale proceeds of >\$7bn since the beginning of 2016, we expect it will continue to evaluate material divestitures which should help close its price/NAV discount vs. peers.

EVIDENCE

Outperforms peers on several key metrics: 1) above-avg unbooked-to-proved ratio (~6.7x vs. large cap peers' ~4.5x); 2) 2017-21 cash flow per debt-adjusted share growth (metric with highest correlation to intra-sector relative performance) of ~10% per annum (vs. peers' ~8%) at futures strip prices; & 3) 2018-20 oil growth of ~13% per annum (vs. peers of ~9% per annum)

WHAT'S PRICED IN?

At strip prices, APC is trading at a P/NAV of 0.69x vs. peers' 1.28x. APC also trades at a ~1 turn discount to peers on 2018E EV/DACF, vs. its historical ~0.2x turn premium to the group.

UPSIDE / DOWNSIDE SPECTRUM



COMPANY DESCRIPTION

Anadarko Petroleum is an independent oil and gas exploration and production company with operations in onshore resource plays in the Rocky Mountains, the southern US, and the...

William A. Featherston, Analyst, william.featherston@ubs.com, +1-212-713 9701

Anadarko Petroleum Corp. 3 May 2017

UBS 2

Anadarko Petroleum Corp.

UBS Research

COMMENTARY

[return](#) ↑

Key Highlights from 1Q Results

- **APC maintained its 2017 capex budget of \$4.5-\$4.7 billion (up ~60-68% YoY and excluding WES spending of ~\$930 million).** We'd note APC is allocating ~\$560 million to midstream spend this year, well above last year's midstream capex of ~\$150 million). The bulk (~80%) of APC's capex will be allocated towards its **U.S. onshore upstream and midstream developments** where it expects to spend ~\$1.9 billion, of which ~\$840 million and ~\$820 million will be spent in the DJ and Delaware Basins upstream activity, respectively. The company is planning to average 10-14 rigs to drill >150 gross wells (vs. an average of ~7 rigs and ~104 wells last year) in the Delaware Basin and 5-6 rigs to drill ~290 wells (vs. an average of ~2 rigs and ~90 wells last year). APC also expects to spend ~\$560 million on the expansion of its midstream infrastructure in the Delaware Basin. Meanwhile, APC is planning to spend ~\$1.1 billion on its **deepwater Gulf of Mexico, Algeria, and Ghana assets** and another ~\$650 on **exploration** to drill up to 10 exploration/appraisal wells in the deepwater Gulf of Mexico, Cote d'Ivoire, and Colombia. APC will also spend ~\$120 million on its Mozambique LNG project and ~\$100 million on corporate/other. *Assuming 2017 capex of ~\$4.6 billion and current futures strip prices, we forecast APC will generate a FCF deficit (after dividends) this year of ~\$455 million.*
- **APC also reiterated its 2017 production guidance of 644-655 MBoed (357-362 MBbld oil) which excludes volumes associated with its Eagle Ford and Marcellus divestitures that closed in 1Q17.** But with Eagle Ford and Marcellus contributing ~40 MBoed and ~84 MBoed to 1Q volumes, respectively, we estimate APC's implied "reported" production range is ~675-686 MBoed (see Figure 1 below). Meanwhile, APC's 2017 production guidance includes volumes (~80 MBoed, ~80% oil) from its Gulf of Mexico acquisition which closed on December 15th and we estimate implies a pro-forma 2016 base of ~651 MBoed (Figure 2 below). Thus, we estimate APC's "organic" total and oil production growth for 2017 is roughly flat and up ~3% YoY, respectively while natural gas should decline ~7% YoY and NGLs should increase ~9% YoY. *We left our FY17 production estimate roughly unchanged at ~688 MBoed, at the high end of APC's implied "reported" volume guidance.*

Figure 1: APC's Same-Store Sales and Implied Reported Production Guidance in 2017 vs. 2016

	2016	2017 ⁽¹⁾
Oil (MMbbl/d)	287	360
NGLs (MMbbl/d)	90	98
Natural Gas (MMcfd)	1,187	1,185
Total "Same-Store Sales" (MBoed)	575	655
Eagle Ford (MBoed) - closed March 1st		10
Marcellus (MBoed) - closed March 31st		21
Total "Reported" Production (MBoed)	793	686

Source: Company documents and UBS estimates

(1) assumes mid-point of APC's 2017 production guidance

Figure 2: APC's Pro-Forma (Adjusted for GoM Acquisition) Production Guidance in 2017 vs. 2016

	2016 ⁽¹⁾	2017	YoY Change
Oil (MMbbl/d)	348	360	3.4%
NGLs (MMbbl/d)	90	98	8.9%
Natural Gas (MMcfd)	1,279	1,185	-7.4%
Total Pro-Forma Production (MBoed)	651	655	0.6%

Source: Company documents and UBS estimates

(1) assumes ~80 MBoed from GoM acquisition is in for FY16

- APC disclosed 2Q17 volume guidance of 626-648 MBoed, below consensus of 663 MBoed and our prior estimate of 653 MBoed. We'd note APC has a strong track record of setting conservative quarterly targets as well as initial annual production targets which it then beats. As outlined in Figure 3 below, APC has reported quarterly production above the mid-point of its original guidance range in 24 of the past 25 quarters by an average of 2.4%. And as shown in Figure 4, APC has beaten the mid-point of the full year guidance it provides at the beginning of each year for each of the last eight years, and has exceeded the top end of the range in six of those years.

Figure 3: APC Has Historically Exceeded the High End of Quarterly Guidance

	APC Guidance (MBoed)	Midpoint of Guidance	Reported Production	Production Beat vs. Midpoint	Production Beat vs. High End
1Q17	656-678	667	671 ⁽¹⁾	0.6%	-1.0%
4Q16	696-717	706.5	739 ⁽²⁾	4.6%	3.1%
3Q16	739-761	750	780	4.0%	2.5%
2Q16	780-802	791	792	0.1%	-1.2%
1Q16	813-815	824	827	0.4%	-1.0%
4Q15	739-761	750	779	3.9%	2.4%
3Q15	772-793	782.5	787	0.6%	-0.8%
2Q15	846-868	857	846	-1.3%	-2.5%
1Q15	878-907	892.5	934.3	4.7%	3.0%
4Q14	837-859	848	853.8	0.7%	-0.6%
3Q14	826-848	837	848.7	1.4%	0.1%
2Q14	791-813	802	847.7	5.7%	4.3%
1Q14	770-793	781.5	802	2.6%	1.1%
4Q13	771-791	781	805.5	3.1%	1.8%
3Q13	757-779	768	775.2	0.9%	-0.5%
2Q13	730-756	743	750.2	1.0%	-0.8%
1Q13	740-769	754.5	793.2	5.1%	3.1%
4Q12	707-730	718.5	741.2	3.2%	1.5%
3Q12	707-725	716	738.5	3.1%	1.9%
2Q12	708-722	715	742	3.8%	2.8%
1Q12	671.5-687.7	679.6	703.7	3.5%	2.3%
4Q11	652-681	666.5	683	2.5%	0.3%
3Q11	636-661	648.5	659.5	1.7%	-0.2%
2Q11	667-686	676.5	684.7	1.2%	-0.2%
1Q11	666-685	675.5	690	2.1%	0.7%

Source: Company documents

(1) Excludes volumes associated with asset sales which contributed 124 MBoed to 1Q17 production but excluded from APC's guidance

(2) Excludes volumes associated with asset sales and acquisitions which contributed 35 MBoed to 4Q16 production but excluded from APC's guidance

Figure 4: APC's Track Record of Exceeding Full Year Production Guidance

	2009	2010	2011	2012	2013	2014	2015*	2016*
Production Growth Guidance (Start of Year)	1-3%	3-5%	4-6%	3-5%	3.8-6.5%	6-7%	(2%)-0%	(2%)-(4)%
Full Year Production Growth	7%	7%	6%	8%	6.2%	7.8%	4.0%	2.7%
Beat vs. Midpoint of Guidance	5%	3%	1%	4%	1%	1%	5.0%	4.7%

Source: Company documents

*Adjusted 2015 full-year production growth to exclude ~31.1 MBoed from asset sales (APC's reported 2015 volumes were 836.1 MBoed and pro-forma – adjusted for asset sales – is 805 MBoed)

*Adjusted 2016 full-year production growth to exclude ~67 MBoed from asset sales/acquisitions (APC's reported 2016 volumes were 793 MBoed and pro-forma – adjusted for asset sales – is 726 MBoed)

- APC made no change to its long-term (2016-21) oil production CAGR of +15% with a 2021 target of ~600 MBbld of oil production.** However, we'd note that its long-term oil production CAGR removes volumes from its 2016 base related to its Gulf of Mexico acquisition; including these volumes in the 2016 base implies an "organic" oil production CAGR of ~11%. Nonetheless, APC expects to deliver this growth "utilizing cash inflows" at ~\$55/Bbl WTI and \$3/Mcf Henry Hub, in line with our model's expectations. But assuming the current depressed futures curve, we estimate APC would have free cash flow deficits to the tune of ~\$850 million per annum from 2018-20 which could presumably be funded by its cash war chest. APC's long-term production will be supported by the continued growth of its onshore US unconventional portfolio (e.g. Delaware and DJ Basins) and the 3Q16 start-up at the TEN complex in Ghana. In order to achieve this growth, APC expects to ramp activity toward ~600 gross wells/year in each play, up from 90 gross wells in the Delaware and 104 in the DJ Basin turned online last year. *Beyond this year, we forecast 2018 companywide production growth of ~5% YoY and oil growth of 15%; from 2019-21, we forecast production growth of >7% per annum and growth in oil production of 11% per annum.* The outsized 2018 oil growth is driven by APC benefitting from adding wells that are currently being choked back after its midstream infrastructure is largely in place and the company shifts to pad development in 2H17.
- APC expects considerable margin improvement in 2017 on the combination of less gassy assets from divestitures and more oil from its recent Gulf of Mexico acquisition.** For reference, APC divested assets last year with a combined >900 MMcfd of natural gas production (~39% of its FY15 natural gas production) while it acquired Gulf of Mexico assets with production of ~80 MBoed (>80% oil). As such, APC expects its companywide oil mix to increase from ~40% in 2016 to ~55% this year which should boost its EBITDX/Boe by ~25% YoY from ~\$19.50 last year to ~\$24 in 2017. And we expect its margins to continue improving with its long-term oil production CAGR increasing its oil mix to ~63% by 2020.

- APC should generate higher cash flow per debt-adjusted share growth over the next several years compared to peers under current futures strip prices. We prefer to measure E&P companies' growth on a debt-adjusted per share basis given varying degrees of capital allocation between capex, share repurchases, and debt reduction. This metric has the highest correlation to intra-sector relative performance. We forecast APC to generate cash flow per debt-adjusted share growth of 10% annually over 2017-21, compared with the global large cap E&P peer average of 8%. Measured on production per debt-adjusted share, we forecast APC posts a 3% CAGR over 2017-21, roughly in line with the global peer average over the same timeframe. We outline APC's debt-adjusted production and cash flow growth vs. peers in Figure 5.

Figure 5: APC's Debt-Adjusted Production and Cash Flow per Share Growth vs. Peers

Global E&Ps	Production (Bcfe) per DA Share						'17-21 CAGR
	2016	2017	2018	2019	2020	2021	
Apache Corporation	-2%	-10%	11%	6%	4%	6%	7%
ConocoPhillips	-12%	0%	-1%	0%	0%	-1%	0%
Hess Corporation	-24%	-8%	3%	0%	2%	4%	2%
Marathon Oil	-31%	-4%	1%	10%	9%	9%	7%
Murphy Oil	-25%	0%	3%	-1%	4%	-5%	0%
Noble Energy	4%	-12%	1%	16%	19%	20%	14%
Occidental Petroleum	-11%	-6%	5%	3%	0%	-1%	2%
Average	-14%	-6%	3%	5%	5%	5%	4%
Anadarko Petroleum	-16%	-11%	4%	4%	3%	4%	3%

Global E&Ps	Discretionary Cash Flow per DA Share						'17-21 CAGR
	2016	2017	2018	2019	2020	2021	
Apache Corporation	-32%	33%	1%	2%	12%	7%	5%
ConocoPhillips	-43%	67%	24%	-8%	2%	-1%	4%
Hess Corporation	-62%	64%	1%	2%	9%	10%	6%
Marathon Oil	-52%	80%	0%	17%	17%	17%	13%
Murphy Oil	-46%	54%	0%	-6%	4%	-2%	-1%
Noble Energy	-24%	-1%	14%	28%	36%	31%	27%
Occidental Petroleum	-35%	33%	7%	3%	0%	2%	3%
Average	-42%	47%	7%	6%	12%	9%	8%
Anadarko Petroleum	-46%	54%	12%	11%	9%	9%	10%

Source: UBS Estimates

Note: Based on current NYMEX natural gas, WTI and Brent strip prices (2017- \$3.29/MMBtu, \$49.26/Bbl & \$52.57/Bbl; 2018- \$3.07/MMBtu, \$49.2/Bbl & \$51.37/Bbl; 2019- \$2.87/MMBtu, \$49.43/Bbl & \$51.17/Bbl; 2020- \$2.86/MMBtu, \$50.09/Bbl & \$51.57/Bbl; 2021 & LT- \$2.9/MMBtu, \$50.74/Bbl & \$52.45/Bbl). All figures include the effect of disclosed hedge positions.

- DJ Basin equities (including APC) have sold off recently after a home explosion occurred near one of APC's legacy vertical wells in Firestone, CO...prompting concerns that the accident may re-open discussions of increased setback rules in the basin. Last week, APC disclosed it had shut in 13 MBoed (75% natural gas) from ~3,000 legacy vertical wells in the DJ Basin following a home explosion in Firestone, CO which was located ~200

feet from an Anadarko vertical well. APC and other DJ Basin E&Ps have since underperformed the XOP (oil and gas, exploration and production ETF) by 3-4% since the announcement after market close on April 26th (see Figure 6). Yesterday after the market close, investigators confirmed the explosion was caused by an abandoned, severed one inch gas line that was still connected to APC's nearby well that had not been sealed off properly; the odorless gas saturated the nearby soil and seeped into the home through a French drain and a sump pump in the basement, and was ultimately ignited by an unknown cause.

- **There are still several key uncertainties, including** when the line was cut, how it was cut, and who is responsible...all of which will be resolved in the ongoing investigation. However, given two previous attempts by anti-development groups to reduce the pace of oil and gas development in Colorado, we believe this unfortunate tragedy has and may continue to provide headline risk for APC and other operators in the basin.
- **Market concerns stem from Colorado's history of getting public pushback on oil and gas drilling in the state.** For reference, last year there were many different proposed ballot initiatives affecting Colorado's oil and gas industry with the most concerning one being initiative #78. This initiative (which never acquired enough signatures to make it on the ballot) would have required a 2,500-foot buffer (vs. 500 feet currently) between all new oil and gas development, including fracking, from both occupied structures and areas of special concern, including areas such as waterways, public parks, and open spaces. Notably, the proposal would have reduced available drilling locations by >90%. Thus, the recent home explosion in Firestone, CO is prompting concerns that this tragedy will at a minimum raise operating costs and potentially embolden anti-development efforts similar to initiative #78. Fortunately, the Raise the Bar initiative (Amendment 71) passed last year, which makes future ballot initiatives clear a higher hurdle of also securing 2% of eligible voters in each senate district (as well as signatures equalling 5% of the previous elections voter turnout) as well as requiring an initiative to secure >55% approval to pass.

Figure 6: DJ Basin E&Ps Have Underperformed the XOP by ~3-4% Since 4/26

Ticker	4/26 Closing Price	Current Price	% Change
APC	\$59.96	\$56.28	-6%
BBG	\$4.06	\$3.59	-12%
PDCE	\$58.23	\$54.77	-6%
SYRG	\$8.02	\$7.57	-6%
XOG	\$16.91	\$15.83	-6%
Average			-7%
XOP	\$35.87	\$34.67	-3%

Source: FactSet

- **APC provided a brief exploration update.** In the **deepwater Gulf of Mexico**, the **Calpurnia** exploration well encountered 20 feet of net-oil pay and was subsequently sidetracked updip where it found nearly 60 net feet of true vertical thickness oil pay. The wellbore was temporarily abandoned and is expected to be utilized for future production as a tieback to one of APC's nearby operated facilities at Heidelberg or Caesar/Tonga with first production possibly within 18 months. Meanwhile, the **Shendandoah-6** appraisal well and subsequent sidetrack did not encounter the oil-water contact on the eastern portion of the field. APC has currently suspended appraisal activity while it evaluates the path forward, including monetizing the field or abandoning it as economics are marginal at current oil prices. We carry just \$300 million worth of value for the field in our NAV. In **Colombia**, APC had a discovery at the **Gorgon** exploration well which encountered 260-360 feet of gas pay, its third offshore discovery although we certainly believe it would prefer to find liquids.

Valuation: Discount to Peers on P/NAV and EV/DACF

- **Large discount to peers on price/NAV basis.** On a price/NAV basis assuming futures strip prices, APC trades at 0.69x NAV, well below the average price/NAV multiple in our large-cap E&P coverage of 1.28x. On the UBS price deck, APC is valued at a 0.49x NAV, also a significant discount to the peer average of 0.65x. We view P/NAV as the most relevant comparative multiple for APC given the material exploration success (e.g., Mozambique) that is not yet contributing to current cash flow but certainly has measurable value, as well as the value of WGP (\$7.6 billion of equity net to APC) which contributes minimal cash flow to APC.
- **APC trades at 9.0x and 8.2x 2017-18E DACF under current strip prices, respectively.** Its 2017-18E multiples are ~1x below its peer averages, compared to its historical average of a 0.2x premium, despite material value (Mozambique LNG, WGP) not contributing to 2017-18 cash flow.
- **Adjusting for its stake in WGP, we estimate APC's E&P business is being valued at 8.8x and 8.1x 2017-18E DACF, still 1.2x and 1.0x below the peer averages, respectively under strip,** despite superior debt-adjusted cash flow per share growth outlook.

Figure 7: APC's Valuation vs. Peers Under Various Oil and Gas Price Scenarios

	Price 5/2/2017	EV/DACF Hist. Avg.	Valuation Under UBS Price Deck					Valuation Under NYMEX Strip Prices				
			EV/DACF		P/NAV			EV/DACF		P/NAV		
			2017E	2018E	2019E	1P	2P	2017E	2018E	2019E	1P	2P
Apache Corporation	\$48.47	6.7x	7.0x	6.0x	4.9x	1.59x	0.69x	8.9x	8.5x	8.2x	NA	1.44x
Chesapeake Energy	\$5.32	9.2	8.1	6.1	4.4	1.31	0.75	8.7	8.0	7.6	NA	NA
ConocoPhillips	\$46.70	7.1x	7.6x	5.4x	4.7x	NA	NA	9.4x	7.3x	8.5x	NA	NA
Devon Energy	\$38.85	6.8	8.7	6.6	4.9	1.25	0.57	10.2	9.7	8.9	1.91	1.24
Encana	\$10.58	N/A	11.4x	7.2x	5.2x	NA	0.53x	12.8x	10.0x	9.3x	NA	1.20x
EOG Resources	\$91.87	8.2	10.2	7.6	5.1	NA	0.68	12.1	10.6	8.7	2.26	1.30
Hess Corporation	\$47.01	6.4x	8.3x	7.1x	5.8x	1.17x	0.71x	11.5x	11.2x	11.1x	2.01x	1.32x
Marathon Oil	\$14.64	6.0	7.4	5.5	3.9	1.34	0.65	8.0	7.9	5.9	2.30	1.67
Murphy Oil	\$25.91	6.8x	15.3x	4.4x	4.0x	0.98x	0.60x	5.9x	5.9x	6.0x	NA	1.33x
Noble Energy	\$31.42	7.5	7.7	5.8	3.9	NA	0.51	9.3	8.2	5.6	1.94	0.89
Occidental Petroleum	\$60.04	3.4x	9.8x	3.1x	6.9x	1.16x	0.76x	11.7x	11.0x	10.8x	3.38x	1.15x
Average		7.0x	8.4x	6.4x	4.9x	1.25x	0.65x	10.0x	9.1x	8.4x	1.97x	1.28x
Anadarko Petroleum	\$56.28	7.2x	7.7x	5.9x	4.6x	0.90x	0.49x	9.0x	8.2x	7.5x	1.08x	0.69x
Anadarko Petroleum (exc. WGP)			7.2x	5.3x	4.1x			8.8x	8.1x	7.6x		

Source: Company reports and UBS estimates

Notes: Based on UBS official NYMEX natural gas and WTI and ICE Brent crude oil commodity price forecasts of: 2017- \$3.20/MMBtu, \$57.50/Bbl & \$59.80/Bbl; 2018- \$3.00/MMBtu, \$63/Bbl & \$65/Bbl; 2019 & LT- \$3.25/MMBtu, \$68/Bbl & \$70/Bbl.

Note: Based on current NYMEX natural gas, WTI and Brent strip prices (2017- \$3.29/MMBtu, \$49.26/Bbl & \$52.57/Bbl; 2018- \$3.07/MMBtu, \$49.2/Bbl & \$51.37/Bbl; 2019- \$2.87/MMBtu, \$49.43/Bbl & \$51.17/Bbl; 2020- \$2.86/MMBtu, \$50.09/Bbl & \$51.57/Bbl; 2021 & LT- \$2.9/MMBtu, \$50.74/Bbl & \$52.45/Bbl). All figures include the effect of disclosed hedge positions.

Operational Highlights

Although lower oil prices prompted a near 50% YoY reduction in capital spending last year, APC has materially ramped up US onshore activities since 3Q16 and continued to increase its rig count which currently stands at 21 rigs (up from 17 at the end of January). APC's long-term production growth will be supported by the continued investment in the Niobrara and Delaware Basin (with most other US onshore development plans cut back almost entirely), the 3Q16 start-up at the TEN complex in Ghana, and the start-up at Mozambique next decade. The company is targeting a 2016-20 oil production CAGR of 15% in a \$50-\$60/Bbl price environment, and estimates it holds net risked resource potential of +16 BBoe (1.7 BBoe of proved reserves, 5 BBoe in the DJ and Delaware, 2.5 BBoe in other US onshore, 1.5 BBoe in the deepwater GoM, 3 BBoe in Mozambique, and >2 BBoe risked resources from international and exploration. APC expects to convert 2 BBoe of this resource to proved over the next three years. We highlight updates for each core operating region below:

Onshore Resource Plays

- In the Permian where it holds 245,000 net acres, APC increased the resource estimate of its southern Delaware Wolfcamp position to 3+ BBoe on its investor call in March from the 2+ BBoe disclosed previously. APC raised its Wolfcamp A type well EUR from 1,000+ MBoe to 1,500+ MBoe as it changed its type well from a 4,500-foot lateral "short-lateral-equivalent" (SLE) well to a 7,500-foot lateral "mid-lateral-equivalent" (MLE) well. Despite the longer lateral, APC continues to estimate 6,000+ drilling locations for its new Wolfcamp A wells with well cost of \$7.0 million (vs \$5.1 million for 4,500 foot horizontals implying an 18% reduction in cost per lateral foot). APC added another 5 rigs in the basin during 1Q and has since brought on one additional rig, boosting its total Permian rig count to 15

operated and four non-operated rigs. APC plans to average 10-14 operated drilling rigs during the year and drill more than 150 operated wells. APC spud 51 wells and turned 21 to sales during 1Q17, supporting a ~9% QoQ increase in production to 54 MBoed (+46% YoY), including 31 MBbld of crude oil. ***Assuming an 1,500 MBoe average EUR per well, we estimate APC's Delaware Wolfcamp position holds ~2.9 BBoe of net resource potential worth ~\$27 share to our NAV.***

- **Outside of the Wolfcamp A, APC also estimates 4,000+ drilling locations with EURs of 900-1,300+ MBoed in the Delaware Basin, bringing 1+ BBoe of potential upside to its resource estimate.** APC is evaluating the potential of Wolfcamp B, C, and D benches, and notes other operators on its offset acreage have been drilling in the Bone Spring and Avalon/Leonard zones.
- On the March Investor call, APC highlighted potential gas processing constraints in the Delaware Basin, but noted that its relationship with WES and large investment in midstream (\$560 million this year) will provide it an advantage.
- **In March, APC also increased the resource estimate for its DJ Basin position to 2+ BBoe from 1.5+ BBoe.** APC has 350,000 net acres prospective for the Niobrara in the core Wattenberg field. APC raised its Niobrara from type well EUR by ~15% to 560 MBoe and 385 MBoe for its wells in the core and extended areas, respectively. Similar to the change in the Delaware Basin, APC changed its DJ Basin type well from a 4,500-foot lateral SLE well to a 6,700-foot lateral MLE well, and raised its well cost to \$2.7 million for the new type well from the actual cost of \$2.1 million for a SLE well in 4Q16. Adjusting for lateral length, the new type curve economics benefit from a 14% reduction in well cost per horizontal lateral foot. Despite the longer lateral, APC has now identified 3,600+ and 900+ drilling locations for in the core and extended areas, respectively. APC picked up an additional rig in January, bringing its current total to 6 operated rigs; the company also exited 1Q with two completion crews active in the play. It plans to average 5-6 operated rigs and drill ~290 wells this year. APC spud 71 wells and turned 38 to sales during 1Q17, enabling a slight 1% YoY increase in net sales volumes to ~242 MBoed (although oil volumes declined 17% YoY to 79 MBbld oil). While we believe APC's Delaware Basin position has become at least as competitive as Wattenberg in generating attractive returns, both areas remain drivers of APC's long term oil growth. ***Assuming a weighted average EUR of 525 MBoe average EUR per well, we estimate APC's Wattenberg acreage adds ~\$14.50/share to our NAV.***
- APC's production from the **Greater Natural Buttes** averaged 53 MBoed (~83% natural gas) in 1Q, down 5% QoQ and 24% YoY. The company dropped its only rig in the play during 1Q16.

Gulf of Mexico

- **Gulf of Mexico** net sales volumes rose 51% QoQ to 159 MBoed, nearly double year-ago levels, largely reflecting production associated with the FCX

acquisition (closed on December 15) as well as strong performance from Caesar/Tonga and ramp-ups at Heidelberg and K2.

- APC reached first oil at **Lucius** (49% w.i.) in January 2015; the seventh well came online during 3Q16 and enabled the field to reach average nameplate capacity of 80 MBbld during 4Q16. The eighth producing well is scheduled to spud this month with first production expected by year-end 2017. Along with the announcement it is acquiring FCX's deepwater Gulf of Mexico assets, APC raised its recoverable resource estimate for Lucius by 100 MMBoe to +400 MMBoe. *We estimate the development adds ~59 MMBoe of net unbooked resource potential worth ~\$1.1 billion or \$2.00/share to NAV.*
- At the **Heidelberg** field (44% w.i., post recent acquisition) in the **Gulf of Mexico**, first production commenced in January 2016 from three wells (ahead of original expectations for a 2Q16 start-up) and production from the field is now approaching 40 MBoed. The development's fourth producing well has reached its target rate of 13 MBoed while the fifth well is now online, currently producing 7 MBoed and expected to ramp to a peak rate of ~12 MBoed. *APC estimates Heidelberg holds 200-400 MMBoe of gross resource potential (~116 MMBoe net including ~50 MMBoe unbooked); we value APC's stake in the unbooked resource potential at ~\$645 million, or ~\$1.15/share.*
- At the **Shenandoah** prospect (33% w.i.), the **Shenandoah-6** appraisal well and subsequent sidetrack well failed to establish oil-water contact on the eastern flank of the field and was declared a dry hole. Results from Shenandoah-6 were key to determining the field's true resource size and progressing towards a final investment decision; appraisal activity has been suspended as the partners evaluate future plans for the project. APC has written off the asset and we no longer ascribe value to it to our NAV.
- The company has stated that its **Gulf of Mexico tie back opportunities generate IRRs of >70% at ~\$60/Bbl WTI (and ~30% IRRs at ~\$30/Bbl)**, and has identified over 50 such opportunities (including recent acquisition) in the Gulf of Mexico. To that end, it has been named operator after reaching a co-development agreement on the **Constellation** prospect (33% interest). Development drilling will begin in 2Q17 with first production from 2-3 wells tied back to the Constitution spar expected in late 2018. We estimate the field can add 15-20 MBoed of gross production. APC is also evaluating a tie back opportunity at the **Warrior** prospect (65% working interest); it will drill an appraisal well later this quarter, which should dictate timing as to when it could be tied into the Marco Polo facility. Longer term, the **Phobos** prospect (100% working interest) can be tied back at the Lucius facility; however, that facility is currently running at capacity so any future tiebacks will have to await for capacity to become available.

Ghana

- **Jubilee** (APC 24.1% unitized w.i.) production averaged 82.5 MBbld gross during 1Q, up from 78 MBbld in 4Q. The Tullow Oil-operated Jubilee project is

located on both the Deepwater Tano block (18% w.i.) and West Cape Three Points block (31% w.i.) with total resource potential of 470-1,065 MMbbl gross.

- **The operator expects gross production from Jubilee to be ~68.5 MBbld (~16.5 MBbld net to APC) in 2017, which includes a facility shutdown of up to 12 weeks as previously disclosed.** As announced in February 2016, an issue was identified with the turret bearing of the FPSO which resulted in the need to implement new operating and offtake procedures, resulting in the shutdown of the FPSO for an extended period in April with production resuming in early May. At last update, Tullow noted that since then 18 offtakes to the storage tanker had been successfully completed using a dynamically positioned shuttle tanker. It continued to operate the field under these new procedures for the remainder of 2016.
- **For the long term, Tullow and its partners now see converting the FPSO to a permanently spread moored facility, with offtake through a new deepwater offloading buoy, as the preferred solution.** At last disclosure, the first phase of this work will involve the installation of a stern anchoring system to replace the three heading control tugs. The second phase of work will take place in 1H17 to rotate the FPSO to its optimal spread moor heading. These phases are expected to cost \$100-\$150 million and require the Jubilee FPSO to be shut-down for 8-12 weeks in 1H17. Upon completion of the spread mooring work in mid-2017, the partners will review opportunities to improve the efficiency. With additional gross operating expenditure of the revised procedures is expected to be ~\$115 million for 2016 and \$80 million for 2017. Finally, a deepwater offloading buoy is anticipated to be installed in the first half of 2018. While Tullow noted it has a comprehensive package of insurances, APC does not have insurance to cover the facility.
- The **Tweneboa-Enyenra-Ntomme ("TEN")** complex (17% w.i.), located ~30 km west of the Tullow-operated Jubilee Field, achieved first production in mid-August, on time and on budget three years after the Plan of Development was approved by the Government of Ghana in May 2013. It produced ~50 MBbld in 1Q (up from 46 MBbld in 4Q) and FPSO capacity of >80 MBbld was successfully tested during the quarter. WoodMackenzie estimates the TEN complex holds ~280 MMBoe of gross recoverable resource (August 2016 "TEN" report), near the low-end of operator Tullow Oil's 300-500 MMBoe estimate. We estimate the project adds ~\$1.25/share to APC's 2P NAV.
- Also in Ghana, at the **Mahogany/Teak/Akasa/Banda (MTAB) complex** on the West Cape Three Points block (31% working interest), APC and partners have filed a development plan to the government that would enable an expansion of the greater Jubilee area to include the MTAB field. While no details were provided, we expect the plan would extend plateau production from the Jubilee FPSO.

Mozambique LNG

- **Management remains committed to Mozambique LNG, and continues to highlight that the timing of FID is subject to uncertainty regarding its legal and contractual framework, offtake agreements and project financing.**
- **The critical steps to reaching FID and first production by the end of the decade are: 1) approving a plan of development** – the Development Plan for the initial two-train Golfinho/Atum project was submitted to the Mozambique government during 4Q; **2) converting its HOA off-take agreements to firm purchase & sales agreements** (already secured non-binding HOA for >8 MMTPA, but would like to have binding agreements for ~9-10 MMTPA); and **3) securing project financing** (received indications of interest for 2/3 of the ~\$15 billion budget for the first two 6 MMTPA trains). APC estimates it could reach a Final Investment Decision by year end 2017 at the earliest – but more likely 2018. Upon reaching FID, first production should commence 4-5 years later.
- Management has highlighted that it has advanced all critical contracts with the Mozambique government. APC and ENI have jointly submitted the Resettlement Plan which is under review by the government of Mozambique. APC and its partners previously received third-party reserves certification for the Prosperidade complex which straddles the block with ENI's Mamba, as well as reserve certification for Golfinho/Atum which is located entirely on APC's block and large enough to supply Mozambique Train 1. APC has also completed the FEED project and selected a consortium (CB&I, Chiyoda Corporation and Saipem (CCS JV)) for the initial development of the onshore LNG park. It estimates its recoverable resource estimate is +75 Tcf on its Area 1 block (26.5% working interest).
- **In March, ExxonMobil (Sell) agreed to acquire from Eni (Buy) a 25% interest in the Area 4 block offshore Mozambique for \$2.8bn, providing a valuation marker for APC's 26.5% stake in the adjacent offshore Area 1.** While Area 1 contains the separate (from Area 4) Golfinho and Atum fields, we'd note it also consists of the Prosperidade complex which overlaps with ENI's Area 4 (Mamba). And in late 2015, APC and ENI reached a unitization agreement for the massive natural gas resources straddling the Prosperidade/Mamba reservoirs. Thus, we believe the deal between ENI and XOM highlights the value of Area 1 to APC. Assuming recoverable resource of 65 Tcfe in Area 1 (or ~16 Tcfe net to XOM), we estimate XOM is paying ~\$0.175/Mcfe, just below our estimate assumed for APC's stake in Area 1 of ~\$0.188/Mcfe. *As such, we've slightly reduced our estimated value for APC's 26.5% stake in Area 1 to ~\$3.5 billion (or \$6.30/share) from ~\$3.7 billion (or ~\$6.75/share).* Nonetheless, given APC holds an asset worth >\$3 billion that will not contribute to cash flow for several years while it trades at a ~1x turn discount to peers on 2018E EV/DACF, we believe the market is putting little to no value on its stake in Mozambique and the deal between XOM and ENI highlights APC's assets clearly has material value. That being

said, we also believe the market would prefer APC to sell some or its entire stake to pull value forward.

Algeria

- Net sales from **Algeria** averaged 76 MBbld in 1Q17, up 7% YoY and flattish vs. 4Q16. Gross production averaged 374 MBoed during the quarter, down from its recent peak of 404 MBoed in 4Q16.

Exploration Update

APC maintains the most robust exploration program in the E&P sector, and has historically beaten annual resource targets prior to 2014. APC is allocating ~\$650 million to exploration in 2017 to drill up to 10 exploration/appraisal wells in the deepwater Gulf of Mexico, Côte d'Ivoire, and Colombia. As a reminder, APC's 2015 and 2016 exploration programs (~\$600 million and ~\$400 million) targeted >700 MMBoe and 250 MMBoe of resource additions, respectively. In 2014, APC's exploration program targeted >600 MMBoe of resource additions from the ~\$800 million in capital allocated to its exploration program, but discovered a disappointing ~200 MMBoe. However, we'd note that in previous years APC had consistently beaten its annual resource targets by a healthy margin (see Figure 8 below).

- **APC's exploration program has been so efficient at discovering large-scale resource at a low cost that it has been able to monetize a portion of its discoveries to effectively fund its efforts.** From 2006-15, APC discovered ~6.5 BBoe of resource with a capital program of ~\$10 billion, for an impressive finding cost of ~\$1.50/Boe. Over that same time period, it has monetized ~\$14 billion of assets, but still has ~5 BBoe of these discoveries under development with ~250 MBoed of net production. In other words, APC's exploration program has effectively been self-funding as it generated so much resource addition that it was able to divest assets that generated value (proceeds and carried interests) in excess of its exploration capex over that time period.

Figure 8: APC's Historical Resource Adds from Exploration vs. Annual Targets

(in MMBoe)	Resource Target	Actual Resource Discovered	% of Target Achieved
2009	200	357	179%
2010	400	650+	163%
2011	500+	730	146%
2012	800+	1,500+	188%
2013	800+	900+	113%
2014	600+	~200	33%
2015	700+	?	?
2016	250	?	?

Source: Company documents

We outline APC's near term exploration and appraisal activity in each region below:

- In the **deepwater Gulf of Mexico** APC drilled an exploration well at the Calpurnia prospect and plans to drill 4-5 appraisal wells this year.
 - APC announced the **Calpurnia** exploration well (76.45% w.i.) spud in December encountered 60 net feet of oil pay in Miocene-aged sands. Calpurnia is located near the APC-operated Caesar-Tonga, Heidelberg, and Holstein fields. The wellbore was temporarily abandoned and is expected to be used for future production as a tieback to one of the nearby operated facilities.
 - APC announced in mid-December that its **Warrior** prospect (65% w.i.) encountered >210 net feet of oil pay in multiple high-quality Miocene-aged reservoirs. The Warrior discovery is located approximately 3 miles from the Anadarko-operated K2 field and is expected to be tied back to its Marco Polo production facility. An appraisal well is planned to spud in 2Q17, with results helping dictate the timing of when the prospect would be tied back to Marco Polo.
 - After completing operations on the Warrior exploration well, the rig spud the **Shenandoah-6** appraisal well in December and subsequently drilled a sidetrack, but the well did not encounter the oil-water contact on the eastern flank of the field, which was expected to further quantify the full resource potential. APC has currently suspended appraisal activity at **Shenandoah** (33% w.i.) while it evaluates the path forward (likely to either divest or abandon given challenged economics in a ~\$50/Bbl environment).
 - Also in the Shenandoah Basin, a second appraisal well (**Coronado-3**) is planned at the Chevron-operated Coronado discovery (APC 35% w.i.). In March 2013, CVX announced a discovery at the Coronado prospect, which encountered more than 400 feet of net pay in the Inboard Lower Tertiary trend. However, in 2Q14, the initial appraisal well did not find the Lower Miocene objective and was plugged and abandoned.
 - APC also plans to drill a second appraisal well (Phobos-3) at its 2013 **Phobos** discovery (100% w.i.), where it drilled an appraisal well and encountered >90 net feet of high-quality oil pay in the secondary objective Pliocene-aged reservoir (announced in mid-December) and ~130 net feet of oil pay in a Wilcox-aged reservoirs (the primary objective). Located ~12 miles south of the Lucius spar, Phobos is being evaluated as a potential tieback to Lucius in order to hold volumes at that facility flat; however, with Lucius still at capacity, Phobos is unlikely to be tied back to the facility anytime soon.
- On the Grand Fuerte block (50% w.i.) offshore **Colombia**, APC announced in March a natural gas discovery at the **Purple Angel-1** exploration well which was designed to test objectives similar to those at APC's play-opening Kronos discovery. The well encountered 70-110 feet of gas pay although we expected APC to be targeting oil at Purple Angel. For reference, the 2015 Kronos

discovery on the block encountered 130-230 net feet of gas pay in the upper objective and proved a working hydrocarbon system. Subsequently to the end of 1Q, APC made its third discovery offshore Colombia at the **Gorgon** prospect located ~17 miles north/northeast of Purple Angel-1. The well encountered between 260 - 360 feet of gas pay. This is APC's third gas discovery in Colombia, a geologic success but likely a commercial failure as it seeks to find oil. In the **Grand Col** area (100% w.i.), the entire 30,000km² Esmeralda 3D survey was complete during 3Q16, and APC is preparing to evaluate potential drilling locations for possible operations in 2018. Overall, APC has ~16 million gross acres offshore Colombia so any success should increase enthusiasm for follow-on potential. And given APC's high working interest in Colombia, any discoveries that reach the development stage would be candidates for the successful JV/carry agreements it used to develop Lucius and Heidelberg in the deepwater Gulf of Mexico.

- Offshore **West Africa** in **Cote d'Ivoire**, APC plans to drill 1-3 exploration/appraisal wells this year. APC plans to spud another appraisal well at its Paon discovery in May (**Paon-6A**, 65% w.i.) to test the updip extent of the oil accumulation in the "South Channel" of the discovery, with a contingent drillstem and interference test planned for late 2017. For reference, APC previously disclosed that it successfully drilled the **Paon-3A** horizontal sidetrack and encountered ~120 net feet of pay. Following the previously completed Paon-3AR and Paon-4A wells, APC's Paon-5A appraisal well encountered nearly 100 net feet of vertical pay during 1Q16. During 3Q16, a drillstem test was also complete at Paon-5A. With equipment-limited maximum stable flow rates at 9 MBbld and 21 MMcfd, the results met deliverability expectations, and the ongoing Interference test has confirmed reservoir connectivity. At last update, the partners had begun evaluating development options for the field with project sanction possibly in 1H17 with the next step largely dependent on securing an adequate natural gas offtake contract. Given APC's 65% interest in Paon, we expect APC to try to reduce its working interest by bringing in a third party to fund a significant portion of APC's share of the development. On the exploration front, following Paon-6A, APC plans to drill an exploration well at each of the two opportunities, the **Gendarme** and **Colibri** prospects (90% w.i.), adjacent to its discoveries at the **Pelican** prospect in **Block CI-527** and the **Rossignol** prospect in **Block CI-528** (90% w.i. for both blocks) in 3Q16.

Figure 9: APC's Exploration Calendar

Region	Prospect	Working Interest	Spud Date
Gulf of Mexico	Warrior-2 appraisal	65%	2Q17
Gulf of Mexico	Phocas-3 appraisal	65%	2017
Gulf of Mexico	Coronado-3 appraisal	35%	2017
Cote d'Ivoire	Paon-6 appraisal	65%	May 2017
Cote d'Ivoire	Gendarme	90%	2017
Cote d'Ivoire	Colibri	90%	2017

Source: UBS estimates and company data

First Quarter Results Review

- **Clean 1Q17 EPS loss of (\$0.60) was much wider than UBSe of (\$0.28) and consensus of (\$0.24).** Relative to UBSe, the miss was driven entirely by a much higher than expected exploration expense vs. our estimate due to the dry hole at Shenandoah-6, impacting EPS by >\$0.30/share.
- **CFPS of \$1.84 missed consensus of \$1.99 and UBSe of \$2.11.** EBITDX of ~\$1.66 billion rose 126% YoY and was above both consensus and UBSe of ~\$1.47 billion and ~\$1.62 billion, respectively.
- **Companywide sales volumes declined 4% YoY to 795 MBoed, comfortably above the "adjusted" guidance range of 779-801 MBoed (including production from divested assets) but slightly below UBSe of 801 MBoed.** Liquids comprised ~61% of companywide production, above the year ago level of ~54%. Adjusting for asset sales, production was 672 MBoed, in the upper half of the 656-678 MBoed guidance range.
- **Realized commodity prices surged 72% YoY and were 1% above our forecast.** Crude realizations rose 54% YoY to \$50.38/Bbl, NGL realizations surged 74% YoY to \$26.93/Bbl, and natural gas realizations rose 65% YoY to \$2.98/Mcf.
- **Aggregate pre-tax per-unit costs rose 29% YoY to \$6.57/Mcfe, 9% above our forecast entirely driven by the higher than expected exploration expense.** APC's 1Q per unit cost is also well above the estimated peer average of \$5.66/Mcfe.
- **Adjusted GPM income** of \$91 million more than tripled from the year ago \$29 million and exceeded our \$80 million forecast and the \$75-\$85 million guidance range.
- The figure below provides the primary factors impacting APC's 1Q17 EPS and CFPS results, as well as outlining the differences between results and our estimates.

Figure 10: Anadarko Petroleum First Quarter Statistical Summary

	First Quarter Results			Results vs. Estimates			Consensus
	1Q17	1Q16	% Change	1Q17A	1Q17E	% Change	
Production Volumes:							
Natural Gas (Bcf)	167.3	209.6	-19%	167.3	166.9	0%	137.7
Crude Oil (MMBbls)	33.0	28.7	17%	33.0	33.3	-1%	32.6
Natural Gas Liquids (MMBbls)	10.6	11.6	-9%	10.6	10.9	-3%	10.4
Total (Boe)	429.2	451.5	-4%	429.2	432.3	-1%	396.4
Total (MBoed)	794.8	826.8	-4%	794.8	800.6	-1%	734.0
Prices:							
Natural Gas (\$/Mcf)	\$2.98	\$1.81	65%	\$2.98	\$3.02	-1%	\$3.09
Crude Oil (\$/Bbl)	50.38	32.72	54%	50.38	49.21	2%	50.30
Natural Gas Liquids (\$/Bbl)	26.93	15.50	74%	26.9	26.6	1%	23.81
Total (\$/Mcf) (a)	\$5.70	\$3.32	72%	\$5.70	\$5.63	1%	
E&P Unit Costs (\$/Mcf):							
Lifting Cost	\$0.60	\$0.46	30%	\$0.60	\$0.53	13%	
Transportation	0.58	0.54	8%	0.58	0.60	-3%	
Administrative and General	0.63	0.54	15%	0.63	0.65	-4%	
DD&A	2.60	2.55	2%	2.60	2.65	-2%	
Exploration Expense	1.29	0.28	352%	1.29	0.68	88%	
Interest	0.52	0.49	7%	0.52	0.51	2%	
Production Taxes (% of Rev)	6.3%	7.8%	-19%	6.3%	7.0%	-10%	
Total	\$6.57	\$5.11	29%	\$6.57	\$6.01	9%	
	2.69						
Pre-Tax Income Per Mcfe	(\$0.87)	(\$1.80)	-51%	(\$0.87)	(\$0.38)	126%	
Cash Flow Per Mcfe	\$2.36	\$0.86	174%	\$2.36	\$2.69	-12%	
Earnings Per Share	(\$0.60)	(\$1.12)	-47%	(\$0.60)	(\$0.28)	113%	(\$0.24)
Cash Flow Per Share	\$1.84	\$0.76	141%	\$1.84	\$2.11	-13%	\$1.99
EBITDX	\$1,659	\$733	126%	\$1,659	\$1,615	3%	\$1,466

Source: Company documents and UBS estimates

Figure 11: APC's Production, Price Realizations, and Per-Unit Costs (2014-2021E)

	2014	2015	2016					2017E					2018E	2019E	2020E	2021E
Production Volumes																
Natural Gas (Bcf)	846.1	852.0	708.5	799.1	784.4	773.1	796.0	787.8	777.8	786.8	780.5	788.5	781.7	799.4	787.4	775.8
U.S.																
Canada																
Other International																
Natural Gas Total (Bcf)	846.1	852.0	708.5	799.1	784.4	773.1	796.0	787.8	777.8	786.8	780.5	788.5	781.7	799.4	787.4	775.8
Crude Oil (MMBbls)																
U.S.	73.9	84.8	21.1	20.7	21.4	22.1	86.3	24.0	22.9	25.5	28.5	101.1	121.3	140.6	168.0	177.0
Alaska																
Nigeria	24.1	21.8	5.9	5.4	5.8	5.3	23.8	6.3	5.6	5.1	5.1	22.1	22.1	22.1	22.1	22.1
Canada																
Other International	8.2	8.4	1.6	0.0	1.7	2.6	8.8	2.5	2.5	2.1	2.3	8.6	8.0	8.9	11.0	11.0
Crude Oil Total (MMBbls)	106.2	115.0	28.7	26.1	28.9	30.0	118.7	32.8	31.1	32.6	35.9	132.7	151.4	172.6	191.1	210.0
Natural Gas Liquids (MMBbls)																
U.S. & Canada	42.5	45.1	11.1	11.5	11.2	10.7	44.5	10.9	8.8	9.2	8.0	34.8	38.0	42.9	47.2	51.0
Alaska	1.1	2.2	0.5	0.5	0.6	0.7	2.4	0.5	0.5	0.5	0.5	2.1	2.0	1.9	1.8	1.7
Natural Gas Liquids Total (MMBbls)	43.7	47.3	11.6	11.9	11.8	11.4	46.9	11.4	9.3	9.7	8.5	36.9	40.0	44.8	49.0	52.7
Prices																
Natural Gas (\$/Bcf)																
UBS Forecast (Bcf)	\$4.45	\$5.87	\$3.09	\$1.96	\$2.81	\$2.88	\$2.46	\$3.30	\$3.26	\$3.00	\$3.35	\$3.30	\$3.00	\$3.35	\$3.35	\$3.35
UBS Forecast (Henry Hub)	\$3.88	\$2.72	\$1.81	\$1.82	\$1.70	\$1.50	\$1.06	\$2.89	\$2.91	\$2.70	\$2.95	\$2.80	\$2.66	\$2.90	\$2.90	\$2.90
U.S.																
Canada																
Other International	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas Total (\$/Bcf)	\$3.98	\$2.72	\$1.81	\$1.92	\$2.75	\$2.95	\$2.00	\$2.93	\$2.95	\$2.70	\$2.95	\$2.80	\$2.66	\$2.90	\$2.90	\$2.90
Differentials to NYMEX Henry Hub																
U.S.	(\$0.41)	(\$0.34)	(\$0.28)	(\$0.33)	(\$0.48)	(\$0.42)	(\$0.37)	(\$0.54)	(\$0.30)	(\$0.30)	(\$0.30)	(\$0.30)	(\$0.30)	(\$0.30)	(\$0.30)	(\$0.30)
Canada																
Crude Oil (\$/Bbl)																
UBS Forecast (WTI)	\$52.88	\$49.81	\$33.84	\$46.58	\$44.82	\$49.16	\$43.35	\$51.77	\$56.50	\$60.50	\$62.00	\$67.50	\$67.00	\$69.00	\$69.00	\$69.00
UBS Forecast (Brent)	\$58.38	\$50.57	\$35.22	\$47.41	\$47.46	\$51.36	\$45.69	\$56.11	\$61.60	\$65.50	\$66.00	\$70.80	\$69.00	\$70.00	\$70.00	\$70.00
U.S.	\$1.4	45.1	\$2.33	\$2.15	\$4.36	\$4.12	\$2.6	\$9.29	\$3.00	\$7.52	\$6.14	\$4.8	\$3.6	\$6.5	\$6.5	\$6.5
Alaska																
Nigeria	107.7	\$1.9	\$4.62	\$4.15	\$4.38	\$4.00	\$4.2	\$1.20	\$3.80	\$4.50	\$4.4	\$7.4	\$3.0	\$8.0	\$8.0	\$8.0
Canada																
Other International	103.3	\$1.0	\$2.32	\$2.37	\$4.61	\$2.18	\$3.2	\$3.77	\$5.50	\$6.10	\$2.00	\$7.7	\$3.0	\$8.0	\$8.0	\$8.0
Crude Oil Total (\$/Bbl)	\$56.00	\$48.84	\$29.32	\$43.99	\$44.75	\$48.10	\$42.64	\$50.31	\$54.50	\$58.17	\$59.18	\$66.48	\$65.00	\$66.96	\$66.96	\$66.96
Differentials to NYMEX WTI																
U.S.	(\$1.88)	(\$1.85)	(\$4.15)	(\$4.58)	(\$2.64)	(\$2.10)	(\$3.62)	(\$2.48)	(\$2.50)	(\$2.50)	(\$2.50)	(\$2.48)	(\$2.50)	(\$2.50)	(\$2.50)	(\$2.50)
Alaska	(\$1.99)	(\$1.40)	(\$4.18)	(\$4.23)	(\$4.18)	(\$4.54)	(\$4.48)	(\$1.91)	(\$2.70)	(\$2.00)	(\$2.70)	(\$1.98)	(\$2.00)	(\$2.00)	(\$2.00)	(\$2.00)
Canada																
Other International	\$0.67	(\$2.07)	(\$3.05)	(\$0.04)	(\$1.85)	(\$4.77)	(\$2.48)	(\$1.34)	(\$2.00)	(\$2.00)	(\$2.00)	(\$1.84)	(\$2.00)	(\$2.00)	(\$2.00)	(\$2.00)
Natural Gas Liquids (\$/Bbl)																
U.S. & Canada	\$36.63	\$17.37	\$15.14	\$19.10	\$19.17	\$24.25	\$19.33	\$29.36	\$27.20	\$25.95	\$30.38	\$29.27	\$31.22	\$34.36	\$34.36	\$34.36
Alaska	\$6.0	\$0.1	\$2.8	\$2.1	\$2.34	\$0.1	\$6.6	\$2.8	\$0.3	\$3.9	\$5.0	\$1.5	\$6.7	\$6.3	\$6.3	\$6.3
Natural Gas Liquids Total (\$/Bbl)	\$6.08	\$17.96	\$15.50	\$19.55	\$19.64	\$24.63	\$19.96	\$29.53	\$27.93	\$26.40	\$31.30	\$29.02	\$31.92	\$36.01	\$36.32	\$36.32
Differentials to NYMEX WTI																
U.S.	39%	76%	45%	42%	47%	49%	46%	51%	49%	49%	49%	50%	50%	51%	51%	51%
Alaska	73%	62%	61%	53%	50%	51%	59%	73%	72%	73%	73%	73%	73%	73%	73%	73%
SGP Unit Costs (\$/Bbl)																
Lifting Cost	\$0.64	\$0.62	\$0.46	\$0.47	\$0.48	\$0.48	\$0.47	\$0.60	\$0.70	\$0.70	\$0.70	\$0.67	\$0.70	\$0.70	\$0.70	\$0.70
Transportation	0.64	0.62	0.54	0.57	0.59	0.60	0.60	0.58	0.58	0.58	0.58	0.68	0.68	0.68	0.68	0.68
Administrative and General	0.71	0.67	0.54	0.59	0.55	0.70	0.80	0.62	0.70	0.70	0.70	0.69	0.68	0.64	0.62	0.60
DDA	2.47	2.61	2.55	2.39	2.46	2.57	2.47	2.60	3.05	3.05	3.05	2.92	3.00	3.00	3.00	3.00
Exploration Expense	0.76	0.42	0.28	0.18	0.21	0.68	0.46	1.29	0.50	0.55	0.55	0.78	0.68	0.60	0.60	0.60
Amortization of Goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Production Taxes (U.S. & Canada)	8.0%	8.4%	7.0%	6.0%	7.5%	5.1%	7.2%	8.3%	7.0%	6.5%	6.5%	8.8%	8.6%	8.6%	8.6%	8.6%
Production Taxes (U.S. & Canada) - Algeria	8.8%	7.4%	7.0%	6.0%	7.5%	5.1%	7.2%	8.3%	7.0%	6.5%	6.5%	8.8%	8.6%	8.6%	8.6%	8.6%

Source: UBS estimates and Company documents

Figure 12: APC's Income Statement and Discretionary Cash Flow (2014-2021E)

Amount, except per share amounts	2014	2015	2016				2016	2017E				2017E	2018E	2019E	2020E	2021E
			Q3A	Q3A	Q3A	Q3A		Q3A	Q3E	Q3E	Q3E					
Revenue:																
Natural Gas Sales	\$3,764	\$2,310	\$319	\$322	\$441	\$613	\$1,077	\$498	\$356	\$269	\$297	\$1,419	\$1,091	\$1,169	\$1,122	\$1,090
Oil and Schlumberer Service	10,294	8,425	899	1,165	1,305	1,403	4,921	1,664	1,610	1,795	2,170	7,360	9,310	11,399	12,589	13,841
Natural Gas Liquids	1,676	960	160	333	239	281	900	246	222	256	267	1,071	1,290	1,669	1,712	1,608
Other	78	292	28	34	56	81	179	85	45	45	45	200	200	200	200	200
Corporate Income	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	\$16,821	\$9,987	\$1,325	\$1,714	\$2,020	\$2,280	\$7,067	\$2,513	\$2,303	\$2,448	\$2,717	\$10,050	\$11,919	\$14,325	\$16,634	\$18,940
Costs and Expenses:																
Lifting Cost	(\$1,172)	(\$1,014)	(\$208)	(\$202)	(\$154)	(\$203)	(\$811)	(\$253)	(\$240)	(\$249)	(\$257)	(\$1,012)	(\$1,102)	(\$1,194)	(\$1,200)	(\$1,267)
Transportation	(\$1,186)	(\$1,136)	(\$342)	(\$246)	(\$256)	(\$259)	(\$1,002)	(\$349)	(\$209)	(\$200)	(\$213)	(\$873)	(\$912)	(\$989)	(\$1,000)	(\$1,132)
Acquisition and General	(\$239)	(\$1,221)	(\$240)	(\$257)	(\$263)	(\$294)	(\$1,061)	(\$269)	(\$269)	(\$218)	(\$217)	(\$1,044)	(\$1,071)	(\$1,091)	(\$1,139)	(\$1,171)
COA	(\$4,866)	(\$4,022)	(\$1,349)	(\$941)	(\$1,006)	(\$1,009)	(\$4,301)	(\$1,151)	(\$1,031)	(\$1,011)	(\$1,119)	(\$4,389)	(\$4,723)	(\$5,115)	(\$5,484)	(\$5,857)
Exploration expense	(\$1,411)	(\$779)	(\$120)	(\$70)	(\$59)	(\$201)	(\$872)	(\$303)	(\$177)	(\$192)	(\$202)	(\$1,127)	(\$803)	(\$803)	(\$814)	(\$879)
Amortization of Goodwill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production Taxes	(\$1,245)	(\$662)	(\$117)	(\$157)	(\$149)	(\$114)	(\$336)	(\$155)	(\$154)	(\$159)	(\$175)	(\$647)	(\$779)	(\$929)	(\$1,014)	(\$1,102)
Average Production Tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Provision for impairment of production assets	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	(\$10,886)	(\$8,304)	(\$2,019)	(\$1,922)	(\$2,225)	(\$2,267)	(\$8,488)	(\$2,569)	(\$2,140)	(\$2,141)	(\$2,222)	(\$8,103)	(\$8,602)	(\$10,179)	(\$12,088)	(\$13,606)
EBP Operating Income	\$4,736	(\$417)	(\$553)	(\$148)	(\$205)	\$1	(\$801)	(\$45)	\$163	\$355	\$54	\$947	\$2,316	\$4,156	\$4,749	\$5,332
Nonrecurring Income	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
EBP Marketing & Transportation Income	\$198	\$177	\$20	\$67	\$59	\$10	\$216	\$91	\$135	\$105	\$108	\$436	\$430	\$620	\$620	\$681
EBP COA	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Interest Expense	(\$753)	(\$825)	(\$220)	(\$217)	(\$229)	(\$252)	(\$890)	(\$233)	(\$213)	(\$223)	(\$223)	(\$890)	(\$900)	(\$880)	(\$890)	(\$980)
Other Income	(\$19)	(\$19)	(\$10)	(\$10)	(\$41)	(\$21)	(\$86)	(\$14)	\$0	\$0	\$0	(\$14)	(\$46)	(\$30)	(\$25)	(\$40)
EBP Tax Income	\$4,163	(\$1,060)	(\$762)	(\$316)	(\$603)	(\$176)	(\$1,664)	(\$227)	\$45	\$238	\$306	\$447	\$1,810	\$3,716	\$4,381	\$4,893
Income Taxes	262	227	\$93	\$29	\$30	(\$30)	319	(\$55)	(\$10)	(\$12)	(\$127)	(\$67)	(\$694)	(\$1,270)	(\$1,862)	(\$1,877)
Tax Rate	46%	23%	30%	29%	7%	-17%	19%	-24%	-30%	-30%	-37%	50%	38%	37%	38%	38%
Income from Equity Affiliates	\$197	\$191	\$30	\$61	\$83	\$23	\$253	\$41	\$65	\$65	\$65	\$238	\$266	\$295	\$295	\$295
Net Income	\$2,094	(\$1,619)	(\$711)	(\$504)	(\$649)	(\$222)	(\$1,800)	(\$330)	(\$34)	\$102	\$204	(\$67)	\$949	\$2,062	\$2,406	\$2,821
Income from Discontinued Operations																
Preferred Dividend	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Income Available to Common	\$2,094	(\$1,619)	(\$711)	(\$504)	(\$649)	(\$222)	(\$1,800)	(\$330)	(\$34)	\$102	\$204	(\$67)	\$949	\$2,062	\$2,406	\$2,821
EPS	\$4.13	(\$2.01)	(\$1.12)	(\$0.80)	(\$0.89)	(\$0.66)	(\$3.00)	(\$0.66)	(\$0.08)	\$0.10	\$0.37	(\$0.13)	\$1.85	\$2.06	\$2.41	\$2.82
# EPS (excluding discontinued ops)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avg Shares - Basic (milions)	606	607	609.4	610.5	611.0	611.0	629.8	611.0	612.4	613.8	614.4	613.1	616.9	619.9	624.9	629.9
Avg Shares - Diluted (milions)	607	609	609.6	610.0	611.0	611.0	621.8	613.0	613.4	614.4	615.4	613.9	617.4	621.4	626.4	631.4
Share Repurchase Worksheet																
Discretionary Cash Flow																
Amount, except per share amounts	2014	2015	2016				2016	2017E				2017E	2018E	2019E	2020E	2021E
			Q3A	Q3A	Q3A	Q3A		Q3A	Q3E	Q3E	Q3E					
Net Income Before Preferred	\$2,094	(\$1,619)	(\$711)	(\$504)	(\$649)	(\$222)	(\$1,800)	(\$330)	(\$34)	\$102	\$204	(\$67)	\$949	\$2,062	\$2,406	\$2,821
D.D. & A	4,664	4,602	1,349	964	1,069	1,069	4,301	1,115	1,081	1,053	1,119	4,369	4,723	5,115	5,484	5,857
Amortization of Goodwill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Taxes	1,320	(\$1,196)	(\$100)	(\$116)	(\$28)	(\$30)	(\$423)	0	0	0	0	63	381	758	911	1,029
Deferred Tax - as a percentage	70.2%	-41.2%	-6.7%	-18.1%	-10.2%	-10.0%	-13.8%	0.0%	25.0%	25.0%	25.0%	16.8%	54.1%	54.1%	54.8%	54.1%
Amortization of Restr. Stock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest expense - zero coupon bonds	16	16	4	4	4	4	16	4	4	4	4	16	16	16	16	16
Impairment of oil & gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exploration Expense	1,546	3,267	35	10	25	113	619	250	124	137	141	862	667	666	686	696
Deferred Exploration - as a percentage	41%	241%	20%	12%	34%	101%	77%	40%	30%	30%	30%	50%	67%	67%	67%	67%
Capitalized Interest	(\$198)	(\$182)	(\$30)	(\$42)	(\$31)	(\$30)	(\$131)	(\$25)	(\$25)	(\$25)	(\$25)	(\$130)	(\$146)	(\$160)	(\$163)	(\$164)
Capitalized COA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	\$9,821	\$4,508	\$1,859	\$470	\$801	\$1,094	\$2,767	\$1,014	\$1,144	\$1,338	\$1,481	\$4,927	\$6,484	\$6,338	\$9,270	\$10,193
Cash Flow Per Share	\$17.83	\$9.87	\$10.76	\$10.84	\$11.56	\$11.56	\$16.30	\$1.64	\$2.07	\$2.35	\$2.63	\$8.03	\$11.65	\$11.85	\$15.40	\$17.90

Source: UBS estimates and Company documents.

Figure 13: APC's Cash Flow Statement and Balance Sheet (2014-2021E)

	2014	2015	1Q-16A	2Q-16A	3Q-16A	4Q-16A	2016	1Q-17A	2Q-17E	3Q-17E	4Q-17E	2017E	2018E	2019E	2020E	2021E
Cash Flows From Operations																
Net Income	(\$1,583)	(\$4,612)	(\$598)	(\$811)	(\$747)	(\$452)	(\$2,008)	(\$275)	(\$34)	\$102	\$204	(\$2)	\$838	\$2,052	\$2,405	\$2,821
DD&A	4,550	4,603	1,149	984	1,066	1,009	4,301	1,115	1,081	1,083	1,119	4,389	4,723	5,115	5,484	5,857
Amortization of Goodwill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Taxes	(105)	(3,152)	(413)	(407)	(301)	(117)	(1,236)	(660)	3	18	32	(607)	384	755	841	1,029
Exploration	1,245	2,267	35	10	255	313	613	1,012	124	137	141	1,414	867	556	596	636
Impairments	836	5,675	16	18	27	165	227	373	0	0	0	373	0	0	0	0
Other	(885)	1,577	517	887	555	54	1,613	(578)	4	4	4	(865)	15	15	15	15
Discretionary Cash Flow	\$3,977	\$3,558	\$306	\$681	\$858	\$1,063	\$2,008	\$668	\$1,179	\$1,343	\$1,501	\$4,712	\$5,624	\$6,493	\$9,410	\$10,358
Working Capital Changes	4,480	(5,435)	(443)	548	(73)	80	82	434	0	0	0	434	0	0	0	0
Cash Provided by Operations	\$8,466	(\$1,877)	(\$137)	\$1,228	\$785	\$1,123	\$3,000	\$1,123	\$1,179	\$1,343	\$1,501	\$5,146	\$5,624	\$6,493	\$9,410	\$10,358
Cash Flows From Investing																
Capital Expenditures	(\$8,506)	(\$6,967)	(\$1,022)	(\$857)	(\$739)	(\$887)	(\$3,505)	(\$1,194)	(\$1,383)	(\$1,433)	(\$1,575)	(\$5,584)	(\$5,230)	(\$7,430)	(\$7,930)	(\$7,830)
Acquisition Costs	(\$1,527)	(\$3)	0	0	0	0	(\$1,740)	0	0	0	0	0	0	0	0	0
Net Proceeds From Asset Sales	4,968	1,415	35	865	381	1,075	2,356	2,851	200	0	0	3,051	0	0	0	0
Other	-405	-115	14	0	67	45	127	65	0	0	0	55	0	0	0	0
Cash Provided (Used In) Investing	(\$6,472)	(\$4,771)	(\$973)	58	(\$291)	(\$1,506)	(\$2,762)	\$1,722	(\$1,183)	(\$1,433)	(\$1,575)	(\$2,468)	(\$5,230)	(\$7,430)	(\$7,930)	(\$7,930)
Cash Flows From Financing																
Increase in Long Term Debt	\$2,879	\$4,632	4002.0	593.0	565.0	202.0	\$6,042	0.0	14.3	151.7	89.8	\$256	\$0	\$0	\$0	\$0
Repayment of Long Term Debt	(1,425)	(4,033)	(\$1,608)	(\$3,817)	(\$598)	(\$809)	(6,832)	(\$10)	\$0	\$0	\$0	(10)	(203)	(682)	(1,001)	(1,088)
Issuance of Preferred Stock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Equity Issuance	121	34	30	0	2,158	0	2,188	0	52	0	52	104	123	123	123	123
Equity Repurchase	(45)	(55)	(30)	(1)	(1)	(6)	(38)	(21)	0	0	0	(21)	0	0	0	0
Dividends Paid	(505)	(553)	(25)	(26)	(27)	(27)	(105)	(28)	(28)	(28)	(28)	(111)	(117)	(123)	(129)	(135)
Other	650	195	70	461	(5)	227	753	(138)	0	0	0	(138)	0	0	0	0
Net Cash Used In Financing	\$1,675	\$220	\$3,110	(\$2,790)	\$2,082	(\$413)	\$2,008	(\$198)	\$39	\$124	\$114	\$79	(\$108)	(\$681)	(\$1,006)	(\$1,700)
Effect of Exchange Rate Change	2	(2)	-1.0	0.0	0.0	0.0	(1)	0.0	0.0	0.0	0.0	-	-	-	-	-
Change in Cash	3,671	(6,430)	2,008	(1,553)	2,586	(786)	2,245	2,647	35	35	40	2,757	196	382	474	728
Cash at Beginning of Period	3,098	7,369	939	2,947	1,384	3,980	939	3,184	5,831	5,866	5,901	3,164	5,941	6,138	6,521	6,994
Cash at End of Period	7,389	939	2,947	1,384	3,980	3,184	3,184	5,831	5,866	5,901	5,941	5,941	6,138	6,521	6,994	7,722
		14779.2														
	2014	2015	1Q-16A	2Q-16A	3Q-16A	4Q-16A	2016	1Q-17A	2Q-17E	3Q-17E	4Q-17E	2017E	2018E	2019E	2020E	2021E
Assets																
Current Assets	\$11,221	\$3,982	\$5,767	\$3,212	\$5,918	\$5,286	\$5,266	\$7,707	\$7,742	\$7,777	\$7,817	\$7,817	\$8,015	\$8,387	\$8,871	\$9,588
Property Plant and Equipment	41,989	33,751	33,526	32,345	31,099	32,168	32,168	29,065	29,042	29,255	29,569	29,569	30,408	32,188	34,018	35,454
Goodwill	6,569	6,331	6,325	6,237	6,197	5,604	5,904	5,739	5,739	5,739	5,739	5,739	5,739	5,739	5,739	5,739
Deferred Charges & Other	2,310	2,350	2,304	2,239	2,203	2,226	2,226	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182
Total Assets	\$61,089	\$46,414	\$47,922	\$44,033	\$45,417	\$45,584	\$45,564	\$44,693	\$44,705	\$44,953	\$45,307	\$45,307	\$46,344	\$48,485	\$50,809	\$52,974
Liabilities and Stockholders Equity																
Current Liabilities	\$10,234	\$4,181	\$6,657	\$3,244	\$3,762	\$3,326	\$3,326	\$3,762	\$3,762	\$3,762	\$3,762	\$3,762	\$3,762	\$3,762	\$3,762	\$3,762
Long-Term Debt	15,092	15,718	15,726	15,641	15,090	15,281	15,281	15,284	15,298	15,450	15,540	15,540	15,337	14,655	13,654	11,665
Other Long Term Liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Taxes	8,249	5,400	4,940	4,686	4,343	4,324	4,324	3,864	3,867	3,885	3,717	3,717	4,097	4,853	5,783	6,792
Other Deferred	4,786	5,658	5,858	5,862	6,310	7,134	7,134	6,904	6,808	6,912	6,815	6,815	6,930	6,945	6,860	6,975
Preferred Stock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stockholders Equity	22,318	15,457	14,701	14,800	15,912	15,497	15,497	15,078	15,070	15,144	15,373	15,373	16,218	18,270	20,670	23,479
Total	\$61,089	\$46,414	\$47,922	\$44,033	\$45,417	\$45,584	\$45,564	\$44,693	\$44,705	\$44,953	\$45,307	\$45,307	\$46,344	\$48,485	\$50,809	\$52,974
Net Debt	\$14,105.0	\$15,917.0	\$16,616.0	\$15,673.0	\$12,934.0	\$13,343.0	\$13,343.0	\$11,338.0	\$11,310.3	\$11,435.1	\$11,484.8	\$11,484.8	\$11,084.0	\$10,020.0	\$8,545.0	\$6,128.8
Net Debt/Capitalization (Year End)	38%	51%	56%	52%	42%	43%	43%	37%	37%	37%	37%	37%	35%	30%	25%	17%
Net Debt/EBITDX (Year End)	1.3x	3.1x											1.7x	1.3x	0.9x	0.7x
Debt/EBITDX	1.3x	3.0x											2.2x	1.8x	1.4x	1.2x
EBITDA/Interest	14.4x	6.2x											7.7x	9.5x	11.9x	14.3x

Source: UBS estimates and Company documents

Anadarko Petroleum Corp.

UBS Research

UPSIDE / DOWNSIDE SPECTRUM

return ↑



Upside (US\$114): Our upside case assumes APC is acquired. In an environment where Super-Majors have under-invested in both global exploration and US unconventional shales, APC offers a one-stop solution, and we believe management is a willing seller. With most acquisitions of E&Ps historically done at NAV, we should note that our NAV estimate for APC is ~\$114/share, implying 9.4x normalized 2018E EV/DACF and +100% upside from current levels.

Upside (US\$80): Our \$80 price target assumes ~0.70x NAV, or 7.0x normalized 2018E DACF.

Downside (US\$51): Our downside case scenario assumes APC fails to meet its short- and long-term production targets, does not have exploration success, and its current FCF deficit widens. Under these assumptions and assuming current strip prices, we could see APC declining to 5.0x normalized 2018E DACF, implying a stock price move to ~\$51/share.

Anadarko Petroleum Corp.

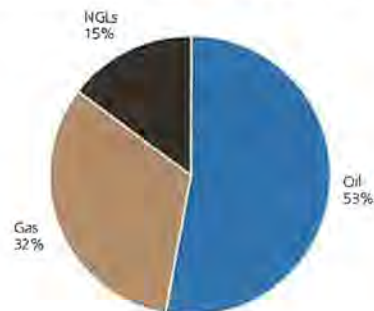
UBS Research

COMPANY DESCRIPTION

[return](#) ↑

Anadarko Petroleum is an independent oil and gas exploration and production company with operations in onshore resource plays in the Rocky Mountains, the southern US, and the Appalachian basin. The company is also among the largest independent producers in the deepwater Gulf of Mexico and has production and exploration activities worldwide, including Algeria, Mozambique, Colombia, Cote d'Ivoire, New Zealand, Ghana, Brazil, Kenya, and several other countries. Anadarko actively markets natural gas, oil, and natural gas liquids production and owns and operates gas-gathering systems in core producing areas.

Production by Commodity (2017E)



Industry outlook

While we came into 2017 with a cautious view of the E&P sector given expensive valuations, this year's sell-off has left us incrementally more positive with E&Ps now discounting a recovery near the long dated futures curve but below our 'normalized' forecasts. But as we expect oil prices to remain in a ~\$50-\$60/Bbl range this year, we continue to prefer well-capitalized, oil-weighted oil E&Ps that are both low on the cost curve and offer attractive relative valuation.

Absolute and Debt-Adjusted Growth Metrics

Anadarko Petroleum (APC)	2016	2017	2018	2019	2020	2021	'17-21 CAGR
Absolute Production Growth	-5%	-1.2%	5%	8%	7%	7%	7%
Production per Debt-Adj Share Growth	-16%	-10%	7%	10%	10%	11%	9%
Cash Flow per Debt-Adj Share Growth	-16%	80%	35%	30%	14%	15%	23%

Source: Company Documents and UBS Estimates

Forecast returns

Forecast price appreciation	+42.1%
Forecast dividend yield	0.4%
Forecast stock return	+42.5%
Market return assumption	6.3%
Forecast excess return	+36.2%

Valuation Method and Risk Statement

Anadarko Petroleum is subject to risks associated with volatile movements in crude oil prices and natural gas prices. Anadarko also has exposure to political, economic and meteorological events as well as geological risk associated with resource exploration. Moreover, Anadarko's production and financial targets are best estimates and at risk of not being achieved while its limited financial guidance disclosures make the forecasting of future earnings results challenging. Our \$80 price target assumes ~0.70x NAV, or 7.0x normalized 2017E DCF.

Required Disclosures

This report has been prepared by UBS Securities LLC, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

For information on the ways in which UBS manages conflicts and maintains independence of its research product; historical performance information; and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures. The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results. Additional information will be made available upon request. UBS Securities Co. Limited is licensed to conduct securities investment consultancy businesses by the China Securities Regulatory Commission. UBS acts or may act as principal in the debt securities (or in related derivatives) that may be the subject of this report. This recommendation was finalized on: 03 May 2017 05:24 AM GMT.

Analyst Certification: Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers and were prepared in an independent manner, including with respect to UBS, and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

UBS Investment Research: Global Equity Rating Definitions

12-Month Rating	Definition	Coverage ¹	IB Services ²
Buy	FSR is > 6% above the MRA.	46%	30%
Neutral	FSR is between -6% and 6% of the MRA.	38%	28%
Sell	FSR is > 6% below the MRA.	16%	18%
Short-Term Rating	Definition	Coverage ³	IB Services ⁴
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 March 2017.

1: Percentage of companies under coverage globally within the 12-month rating category.

2: Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

3: Percentage of companies under coverage globally within the Short-Term rating category.

4: Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

KEY DEFINITIONS: **Forecast Stock Return (FSR)** is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months. **Market Return Assumption (MRA)** is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium). **Under Review (UR)** Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation. **Short-Term Ratings** reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case. **Equity Price Targets** have an investment horizon of 12 months.

EXCEPTIONS AND SPECIAL CASES: **UK and European Investment Fund ratings and definitions are:** **Buy:** Positive on factors such as structure, management, performance record, discount; **Neutral:** Neutral on factors such as structure, management, performance record, discount; **Sell:** Negative on factors such as structure, management, performance record, discount. **Core Banding Exceptions (CBE):** Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified in the Company Disclosures table in the relevant research piece.

Research analysts contributing to this report who are employed by any non-US affiliate of UBS Securities LLC are not registered/qualified as research analysts with FINRA. Such analysts may not be associated persons of UBS Securities LLC and therefore are not subject to the FINRA restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. The name of each affiliate and analyst employed by that affiliate contributing to this report, if any, follows.

UBS Securities LLC: William A. Featherston; Michael Ziffer, CFA; Christopher Zhang, CFA.

Company Disclosures

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
Anadarko Petroleum Corp. , 4, 6a, 6b, 7, 16, 26	APC.N	Buy	N/A	US\$56.28	02 May 2017
Tullow Oil ²⁰	TLW.L	Neutral (CBE)	N/A	205p	02 May 2017

Source: UBS. All prices as of local market close.

Ratings in this table are the most current published ratings prior to this report. They may be more recent than the stock pricing date.

4. Within the past 12 months, UBS AG, its affiliates or subsidiaries has received compensation for investment banking services from this company/entity or one of its affiliates.
- 6a. This company/entity is, or within the past 12 months has been, a client of UBS Securities LLC, and investment banking services are being, or have been, provided.
- 6b. This company/entity is, or within the past 12 months has been, a client of UBS Securities LLC, and non-securities services are being, or have been, provided.
7. Within the past 12 months, UBS Securities LLC and/or its affiliates have received compensation for products and services other than investment banking services from this company/entity.
16. UBS Securities LLC makes a market in the securities and/or ADRs of this company.
20. Because this security exhibits higher-than-average volatility, the FSR has been set at 15% above the MRA for a Buy rating, and at -15% below the MRA for a Sell rating (compared with 6/-6% under the normal rating system).
26. A U.S.-based global equity strategist, a member of his team, or one of their household members has a long common stock position in Anadarko Petroleum Corp.

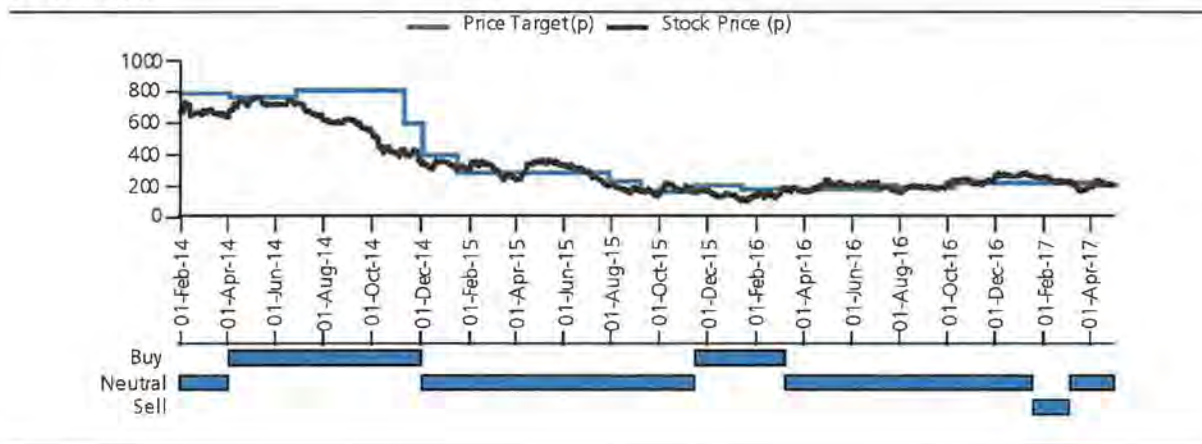
Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report. For a complete set of disclosure statements associated with the companies discussed in this report, including information on valuation and risk, please contact UBS Securities LLC, 1285 Avenue of Americas, New York, NY 10019, USA, Attention: Investment Research.

Anadarko Petroleum Corp. (US\$)



Date	Stock Price (US\$)	Price Target (US\$)	Rating
2014-01-31	80.69	95.0	Buy
2014-04-02	86.47	100.0	Buy
2014-04-03	99.02	110.0	Buy
2014-05-22	101.58	115.0	Buy
2014-06-11	108.32	120.0	Buy
2014-07-02	107.63	127.0	Buy
2014-10-06	97.19	125.0	Buy
2014-12-03	80.67	110.0	Buy
2015-01-26	82.66	100.0	Buy
2015-04-30	94.1	104.0	Buy
2015-06-24	81.45	98.0	Buy
2015-09-07	68.34	82.0	Buy
2015-11-11	61.01	77.0	Buy
2016-01-12	37.33	62.0	Buy
2016-02-02	39.26	60.0	Buy
2016-05-02	51.95	64.0	Buy
2016-07-06	55.19	69.0	Buy
2016-10-31	59.44	73.0	Buy
2016-12-05	68.29	79.0	Buy
2016-12-15	70.33	82.0	Buy
2017-01-18	69.89	81.0	Buy
2017-03-08	61.4	80.0	Buy

Source: UBS; as of 02 May 2017

Tulow Oil (p)

Date	Stock Price (p)	Price Target (p)	Rating
2014-01-31	673.0	788.0	Neutral
2014-04-03	681.0	766.0	Buy
2014-06-27	726.0	809.0	Buy
2014-11-10	433.0	596.0	Buy
2014-12-03	359.0	396.0	Neutral
2015-01-16	311.0	285.0	Neutral
2015-07-29	201.0	230.0	Neutral
2015-09-07	168.0	166.0	Neutral
2015-11-06	186.0	196.0	Neutral
2015-11-16	162.0	204.0	Buy
2016-01-13	110.0	179.0	Buy
2016-03-09	182.0	179.0	Neutral
2016-07-04	219.0	204.0	Neutral
2016-07-28	166.0	192.0	Neutral
2016-10-10	239.0	222.0	Neutral
2017-01-19	256.0	222.0	Sell
2017-03-07	227.0	222.0	Neutral
2017-04-06	212.0	205.0	Neutral

Source: UBS; as of 02 May 2017

Global Disclaimer

This document has been prepared by UBS Securities LLC, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

Global Research is provided to our clients through UBS Neo and, in certain instances, UBS.com (each a "System"). It may also be made available through third party vendors and distributed by UBS and/or third parties via e-mail or alternative electronic means. The level and types of services provided by Global Research to a client may vary depending upon various factors such as a client's individual preferences as to the frequency and manner of receiving communications, a client's risk profile and investment focus and perspective (e.g., market wide, sector specific, long-term, short-term, etc.), the size and scope of the overall client relationship with UBS and legal and regulatory constraints.

All Global Research is available on UBS Neo. Please contact your UBS sales representative if you wish to discuss your access to UBS Neo.

When you receive Global Research through a System, your access and/or use of such Global Research is subject to this Global Research Disclaimer and to the terms of use governing the applicable System.

When you receive Global Research via a third party vendor, e-mail or other electronic means, your use shall be subject to this Global Research Disclaimer and to UBS's Terms of Use/Disclaimer (<http://www.ubs.com/global/en/legalinfo2/disclaimer.html>). By accessing and/or using Global Research in this manner, you are indicating that you have read and agree to be bound by our Terms of Use/Disclaimer. In addition, you consent to UBS processing your personal data and using cookies in accordance with our Privacy Statement (<http://www.ubs.com/global/en/legalinfo2/privacy.html>) and cookie notice (<http://www.ubs.com/global/en/homepage/cookies/cookie-management.html>).

If you receive Global Research, whether through a System or by any other means, you agree that you shall not copy, revise, amend, create a derivative work, transfer to any third party, or in any way commercially exploit any UBS research provided via Global Research or otherwise, and that you shall not extract data from any research or estimates provided to you via Global Research or otherwise, without the prior written consent of UBS.

This document is for distribution only as may be permitted by law. It is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or would subject UBS to any registration or licensing requirement within such jurisdiction. It is published solely for information purposes; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial instruments or to participate in any particular trading strategy. No representation or warranty, either expressed or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in this document ("the Information"), except with respect to information concerning UBS. The Information is not intended to be a complete statement or summary of the securities, markets or developments referred to in the document. UBS does not undertake to update or keep current the Information. Any opinions expressed in this document may change without notice and may differ or be contrary to opinions expressed by other business areas or groups of UBS. Any statements contained in this report attributed to a third party represent UBS's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party.

Nothing in this document constitutes a representation that any investment strategy or recommendation is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. Investments involve risks, and investors should exercise prudence and their own judgement in making their investment decisions. The financial instruments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors. Options, derivative products and futures are not suitable for all investors, and trading in these instruments is considered risky. Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates or other market conditions. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument referred to in the document. For investment advice, trade execution or other enquiries, clients should contact their local sales representative.

The value of any investment or income may go down as well as up, and investors may not get back the full (or any) amount invested. Past performance is not necessarily a guide to future performance. Neither UBS nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the Information.

Any prices stated in this document are for information purposes only and do not represent valuations for individual securities or other financial instruments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by UBS or any other source may yield substantially different results.

This document and the Information are produced by UBS as part of its research function and are provided to you solely for general background information. UBS has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. In no circumstances may this document or any of the Information be used for any of the following purposes:

- (i) valuation or accounting purposes;
- (ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or
- (iii) to measure the performance of any financial instrument.

By receiving this document and the Information you will be deemed to represent and warrant to UBS that you will not use this document or any of the Information for any of the above purposes or otherwise rely upon this document or any of the Information.

UBS has policies and procedures, which include, without limitation, independence policies and permanent information barriers, that are intended, and upon which UBS relies, to manage potential conflicts of interest and control the flow of information within divisions of UBS and among its subsidiaries, branches and affiliates. For further information on the ways in which UBS manages conflicts and maintains independence of its research products, historical performance information and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures.

Research will initiate, update and cease coverage solely at the discretion of UBS Research Management, which will also have sole discretion on the timing and frequency of any published research product. The analysis contained in this document is based on numerous assumptions. All material information in relation to published research reports, such as valuation methodology, risk statements, underlying assumptions (including sensitivity analysis of those assumptions), ratings history etc. as required by the Market Abuse Regulation, can be found on NEO. Different assumptions could result in materially different results.

The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this document is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues; however, compensation may relate to the revenues of UBS and/or its divisions as a whole, of which investment banking, sales and trading are a part, and UBS's subsidiaries, branches and affiliates as a whole.

For financial instruments admitted to trading on an EU regulated market: UBS AG, its affiliates or subsidiaries (excluding UBS Securities LLC) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms in the UK) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this document. For financial instruments admitted to trading on a non-EU regulated market: UBS may act as a market maker save that where this activity is carried out in the US in accordance with the definition given to it by the relevant laws and regulations, such activity will be specifically disclosed in this document. UBS may have issued a warrant the value of which is based on one or more of the financial instruments referred to in the document. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein; such transactions or positions may be inconsistent with the opinions expressed in this document.

United Kingdom and the rest of Europe: Except as otherwise specified herein, this material is distributed by UBS Limited to persons who are eligible counterparties or professional clients. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. **France:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities France S.A. UBS Securities France S.A. is regulated by the ACPR (Autorité de Contrôle Prudentiel et de Résolution) and the Autorité des Marchés Financiers (AMF). Where an analyst of UBS Securities France S.A. has contributed to this document, the document is also deemed to have been prepared by UBS Securities France S.A. **Germany:** Prepared by UBS Limited and distributed by UBS Limited and UBS Europe SE. UBS Europe SE is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). **Spain:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities España SV, SA. UBS Securities España SV, SA is regulated by the Comisión Nacional del Mercado de Valores (CNMV). **Turkey:** Distributed by

UBS Limited. No information in this document is provided for the purpose of offering, marketing and sale by any means of any capital market instruments and services in the Republic of Turkey. Therefore, this document may not be considered as an offer made or to be made to residents of the Republic of Turkey. UBS AG is not licensed by the Turkish Capital Market Board under the provisions of the Capital Market Law (Law No. 5362). Accordingly, neither this document nor any other offering material related to the instruments/services may be utilized in connection with providing any capital market services to persons within the Republic of Turkey without the prior approval of the Capital Market Board. However, according to article 15 (d) (ii) of the Decree No. 32, there is no restriction on the purchase or sale of the securities abroad by residents of the Republic of Turkey. **Poland:** Distributed by UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce regulated by the Polish Financial Supervision Authority. Where an analyst of UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce has contributed to this document, the document is also deemed to have been prepared by UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce. **Russia:** Prepared and distributed by UBS Bank (OOO). **Switzerland:** Distributed by UBS AG to persons who are institutional investors only. UBS AG is regulated by the Swiss Financial Market Supervisory Authority (FINMA). **Italy:** Prepared by UBS Limited and distributed by UBS Limited and UBS Limited, Italy Branch. Where an analyst of UBS Limited, Italy Branch has contributed to this document, the document is also deemed to have been prepared by UBS Limited, Italy Branch. **South Africa:** Distributed by UBS South Africa (Pty) Limited (Registration No. 1995/011140/07), an authorised user of the JSE and an authorised Financial Services Provider (FSP 7328). **Israel:** This material is distributed by UBS Limited. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. UBS Securities Israel Ltd is a licensed Investment Marketer that is supervised by the Israel Securities Authority (ISA). UBS Limited and its affiliates incorporated outside Israel are not licensed under the Israeli Advisory Law. UBS Limited is not covered by insurance as required from a licensee under the Israeli Advisory Law. UBS may engage among others in issuance of Financial Assets or in distribution of Financial Assets of other issuers for fees or other benefits. UBS Limited and its affiliates may prefer various Financial Assets to which they have or may have Affiliation (as such term is defined under the Israeli Advisory Law). Nothing in this Material should be considered as investment advice under the Israeli Advisory Law. This Material is being issued only to and/or is directed only at persons who are Eligible Clients within the meaning of the Israeli Advisory Law, and this material must not be relied on or acted upon by any other persons. **Saudi Arabia:** This document has been issued by UBS AG (and/or any of its subsidiaries, branches or affiliates), a public company limited by shares, incorporated in Switzerland with its registered offices at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH-8001 Zurich. This publication has been approved by UBS Saudi Arabia (a subsidiary of UBS AG), a Saudi closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Tatweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority to conduct securities business under license number 08113-37. **Dubai:** The information distributed by UBS AG Dubai Branch is intended for Professional Clients only and is not for further distribution within the United Arab Emirates. **United States:** Distributed to US persons by either UBS Securities LLC or by UBS Financial Services Inc., subsidiaries of UBS AG, or by a group, subsidiary or affiliate of UBS AG that is not registered as a US broker-dealer (a "non-US affiliate") to major US institutional investors only. UBS Securities LLC or UBS Financial Services Inc. accepts responsibility for the content of a document prepared by another non-US affiliate when distributed to US persons by UBS Securities LLC or UBS Financial Services Inc. All transactions by a US person in the securities mentioned in this document must be effected through UBS Securities LLC or UBS Financial Services Inc., and not through a non-US affiliate. UBS Securities LLC is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule"), and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule. **Canada:** Distributed by UBS Securities Canada Inc., a registered investment dealer in Canada and a Member-Canadian Investor Protection Fund, or by another affiliate of UBS AG that is registered to conduct business in Canada or is otherwise exempt from registration. **Mexico:** This report has been distributed and prepared by UBS Casa de Bolsa, S.A. de C.V., UBS Grupo Financiero, an entity that is part of UBS Grupo Financiero, S.A. de C.V. and is an affiliate of UBS AG. This document is intended for distribution to institutional or sophisticated investors only. Research reports only reflect the views of the analysts responsible for the reports. Analysts do not receive any compensation from persons or entities different from UBS Casa de Bolsa, S.A. de C.V., UBS Grupo Financiero, or different from entities belonging to the same financial group or business group of such. For Spanish translations of applicable disclosures, please see www.ubs.com/disclosures. **Brazil:** Except as otherwise specified herein, this material is prepared by UBS Brasil CCTVM S.A. to persons who are eligible investors residing in Brazil, which are considered to be: (i) financial institutions, (ii) insurance firms and investment capital companies, (iii) supplementary pension entities, (iv) entities that hold financial investments higher than R\$300,000.00 and that confirm the status of qualified investors in written, (v) investment funds, (vi) securities portfolio managers and securities consultants duly authorized by Comissão de Valores Mobiliários (CVM), regarding their own investments, and (vii) social security systems created by the Federal Government, States, and Municipalities. **Hong Kong:** Distributed by UBS Securities Asia Limited and/or UBS AG, Hong Kong Branch. **Singapore:** Distributed by UBS Securities Pte. Ltd. [MC] (P) 007/09/2016 and Co. Reg. No. 198500648C or UBS AG, Singapore Branch. Please contact UBS Securities Pte. Ltd., an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110); or UBS AG, Singapore Branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or document. The recipients of this document represent and warrant that they are accredited and institutional investors as defined in the Securities and Futures Act (Cap. 289). **Japan:** Distributed by UBS Securities Japan Co., Ltd. to professional investors (except as otherwise permitted). Where this document has been prepared by UBS Securities Japan Co., Ltd., UBS Securities Japan Co., Ltd. is the author, publisher and distributor of the document. Distributed by UBS AG, Tokyo Branch to Professional Investors (except as otherwise permitted) in relation to foreign exchange and other banking businesses when relevant. **Australia:** Clients of UBS AG: Distributed by UBS AG (ABN 47 088 129 613 and holder of Australian Financial Services License No. 231087). Clients of UBS Securities Australia Ltd: Distributed by UBS Securities Australia Ltd (ABN 62 008 586 481 and holder of Australian Financial Services License No. 231098). This Document contains general information and/or general advice only and does not constitute personal financial product advice. As such, the information in this document has been prepared without taking into account any investor's objectives, financial situation or needs, and investors should, before acting on the information, consider the appropriateness of the information, having regard to their objectives, financial situation and needs. If the information contained in this document relates to the acquisition, or potential acquisition of a particular financial product by a "Retail" client as defined by section 761G of the Corporations Act 2001 where a Product Disclosure Statement would be required, the retail client should obtain and consider the Product Disclosure Statement relating to the product before making any decision about whether to acquire the product. The UBS Securities Australia Limited Financial Services Guide is available at: www.ubs.com/ecs-research-fsg. **New Zealand:** Distributed by UBS New Zealand Ltd. UBS New Zealand Ltd is not a registered bank in New Zealand. You are being provided with this UBS publication or material because you have indicated to UBS that you are a "Wholesale client" within the meaning of section 5C of the Financial Advisers Act 2008 of New Zealand (Permitted Client). This publication or material is not intended for clients who are not Permitted Clients (non-permitted Clients). If you are a non-permitted Client you must not rely on this publication or material. If despite this warning you nevertheless rely on this publication or material, you hereby (i) acknowledge that you may not rely on the content of this publication or material and that any recommendations or opinions in such this publication or material are not made or provided to you, and (ii) to the maximum extent permitted by law (a) indemnify UBS and its associates or related entities (and their respective Directors, officers, agents and Advisors) (each a "Relevant Person") for any loss, damage, liability or claim any of them may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material and (b) waive any rights or remedies you may have against any Relevant Person for (or in respect of) any loss, damage, liability or claim you may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material. **Korea:** Distributed in Korea by UBS Securities Pte. Ltd., Seoul Branch. This document may have been edited or contributed to from time to time by affiliates of UBS Securities Pte. Ltd., Seoul Branch. **Malaysia:** This material is authorized to be distributed in Malaysia by UBS Securities Malaysia Sdn. Bhd (Capital Markets Services License No.: CMSU/A0063/2007). This material is intended for professional/institutional clients only and not for distribution to any retail clients. **India:** Distributed by UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000. It provides brokerage services bearing SEBI Registration Numbers: NSE (Capital Market Segment): INB230951431, NSE (F&O Segment): INF230951431, NSE (Currency Derivatives Segment): INF230951431, BSE (Capital Market Segment): INB010951437; merchant banking services bearing SEBI Registration Number: INM000010809 and Research Analyst services bearing SEBI Registration Number: INH000001204. UBS AG, its affiliates or subsidiaries may have debt holdings or positions in the subject Indian company/companies. Within the past 12 months, UBS AG, its affiliates or subsidiaries may have received compensation for non-investment banking securities-related services and/or non-securities services from the subject Indian company/companies. The subject company/companies may have been a client/client of UBS AG, its affiliates or subsidiaries during the 12 months preceding the date of distribution of the research report with respect to investment banking and/or non-investment banking securities-related services and/or non-securities services. With regard to information on associates, please refer to the Annual Report at: http://www.ubs.com/global/en/about_ubs/investor_relations/annualreporting.html

The disclosures contained in research documents produced by UBS Limited shall be governed by and construed in accordance with English law.

UBS specifically prohibits the redistribution of this document in whole or in part without the written permission of UBS and UBS accepts no liability whatsoever for the actions of third parties in this respect. Images may depict objects or elements that are protected by third party copyright, trademarks and other intellectual property rights. © UBS 2017. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.

